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AUTHOR Gonczi, Andrew, Ed.
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ABSTRACT

The intent of this document is to provide teachers in vocational education and trainers in industry, commerce and government with a greater understanding of the role of vocational education and training in the current context of economic and industrial change in Australia. Following an introduction, section 1 deals with the policy context of the development of human resources and explains the challenges to vocational educators. It includes the following: (1) "Workplace Reform and Vocational Education and Training" (Geoff Hayton); (2) "The Policy Context for Vocational Education and Training" (Andrew Gonczi, Paul Hager); and (3) "Challenges Facing Vocational Teachers and Trainers in the 1990s" (Geoff Scott). Section 2 deals with strategies for developing learning in the workplace and in vocational education settings. It includes the following: (1) "Communication Competence" (Michael Kaye); (2) "Self-Paced Learning" (Lann Dawes); (3) "Self-Directed Learning" (Griff Foley); (4) "Teaching for Critical Thinking" (Paul Hager); (5) "Mentoring and Coaching" (Peter Russell); (6) "Intensive Workshops" (Hank Schaafsma, Laraine Spindler); and (7) "Learning through Play: Simulations and Games" (Elizabeth Leigh, Hank Schaafsma). Section 3, on self-evaluation and ways of assessing learning, includes the following: (1) "Assessing Standards of Competence" (Doug McCurry); (2) "Assessment in Modern Vocational Education" (Geof Hawke, Liz Oliver); (3) "Recognition of Prior Learning" (Ruth Cohen); and (4) "Self-Evaluation" (Bob Gowing, Shirley Saunders). (CML)

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Developing a competent workforce

ANDREW GONCZI (ED.)

Adult learning strategies for vocational educators and trainers

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ANDREW GONCZI (ED.)

Adult learning strategies for vocational educators and trainers

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Introduction

Aim of the book

This book is aimed at teachers in vocational education and trainers in industry, commerce and government who have had some teaching/training experience and who have already undertaken some study of adult learning and vocational education and training. It should provide them with a greater understanding of the role of vocational education and training in the current context of economic and industrial change in Australia. It should also expand their repertoire of learning and assessment strategies.

The overall theme of the book is that the vocational education and training system of this country has a vital part to play in improving the international competitiveness of the Australian economy. This role has been recently recognised by governments, who have developed a training reform strategy which if implemented will revolutionise this sector of education. The ultimate success of the strategy largely depends on the capacity of teachers and trainers to develop in the workforce the capacities for clear thinking, problem solving, flexibility, self-evaluation, communication and team-work which are essential for the economy of the future. *Developing a Competent Workforce: Adult learning strategies for vocational education and training* has been written to aid those teachers and trainers in this formidable task.

Structure of the book

This book is divided into three sections:

Section 1 : deals with the policy context in which the development of human resources in Australia is taking place and develops a framework for explaining the challenges that face trainers and vocational educators in the 1990s.

Section 2 : deals with a range of strategies for developing learning in the workplace and in vocational education settings. While each chapter deals with a specific learning strategy, they share a commitment to the use of adult learning principles of the kind outlined later in this introduction.

Section 3 : deals with ways of assessing learning in the new vocational education and the new training context—particularly the need to assess prior learning and competency-based training. It also considers the increasing importance of self-evaluation.

Context

Section one of this book addresses the context, both national and international, within which vocational education and training are developing. It is written in the belief that teachers and trainers need to understand fully the nature of these changes and how vocational education and training should be integrated into the competitive strategies of the enterprise or industry in which they work.

There is a growing acceptance world wide, that vocational education and training are a vital component of economic strategy. While it has always been recognised that the work-force needs to update its skills, there have been a number of recent developments which have turned it from something of mere importance into an imperative. The most obvious of these is the increasing pace of technological change which causes individuals' skills to be outdated more quickly than ever before. Allied to this is the more general growth of knowledge which threatens to make irrelevant any education which is narrow and specific.

The changes in technology have also led to a need for workplace reorganisation and for changes in management philosophies—leading towards more participative and democratic structures which encourage individual responsibility creativity and self direction. As increasing numbers of nations have embraced the technological revolution, international competition has intensified. As has been pointed out in a recent OECD study (1991), increasing competitive pressures are forcing firms to develop products which are more customised and are of higher quality than ever before.

A major strategy for increasing Australia's competitiveness is to develop a highly skilled workforce. The importance of 'human capital' in increasing national wealth has been a proposition advanced for decades by economists. Indeed, the development of the higher education systems of most countries have been justified by the perceived need for a highly educated population. There have been, however, relatively few systematic attempts by governments to implement strategies for the development of human resources outside formal higher education. (The vocational training systems of Germany and Japan are the most obvious exceptions.) Recently, there have been a number of pressures on governments to address the issue of developing the competence of the middle and lower levels of the workforce. One has been increased international competition from developing countries, coupled with the greater demand in world markets for *quality, service* and *flexibility*.

Another has been technological change. At the macro level, as the economies of the developed countries evolve under the impact of technological change they become increasingly knowledge-based. This is a well-known phenomenon historically, as economies move from a primary industry base to manufacturing or from secondary to tertiary industry. But over recent times it has been realised that even if an economy retains a substantial manufacturing base it will face the same phenomenon. It is likely that computer-integrated manufacturing techniques will be used, for example, and that more customised goods will be produced. They will also be more intensively marketed. Thus, even manufacturing becomes a knowledge-based industry.

To this has been added the fear of mass unemployment caused by new technologies. The fact that in recent times there has been high economic growth during periods of unemployment has given credence to this view. One interpretation of this apparent paradox is that the workforce is insufficiently skilled to exploit the technologies that have emerged. It follows that if a workforce were better trained and more highly skilled, there could be a growth of productivity and jobs at the same time.

Accordingly, at the macro level, public policy needs to concern itself at the very least with developing a framework within which human resource at all levels of the workforce development (HRD) can flourish. Ideally, however, it could be argued that it should do much more than this. There is currently great pressure in OECD countries to deregulate the labour market and the education and training system in the same way that financial markets have been deregulated. While some would support this direction others would argue that there is a need for governments to play a major role in ensuring that HRD policies are developed within a wider cultural framework which recognises the variety of non–market factors that are an essential part of national development.

At the micro level (concerned with the firm) certain developments also suggests the need for more HRD. As the trend to shorter life cycles for products (and services) develops, there will be increasingly a need for firms to have a workforce which can adapt to change. Training will become a more or less continuous part of the firm's strategy for meeting the unexpected. While not all firms will be affected at the same pace, the overall trends seem irreversible. Consequently the importance of vocational education and training will increase as technological change continues.

The implications of technological change for an HRD policy, both at macro and micro levels, is complicated by demographic factors, specifically the relative decline in the number of young people of working age. This has a number of possible implications for public policy. One of the most likely is that there will be a need to develop the large group of under utilised/under-trained adults who are already in the workforce including those on its periphery as part-time workers. This could lead to a revival of calls for lifelong education, muted since the traumatic effect on the developed economies of the oil shocks of the 1970s. The result for teachers and trainers would be the need to develop learning/teaching and assessment strategies which are appropriate to adult learners.

These issues are dealt with in detail by Hayton in chapter one and by Gonczi and Hager in chapter two. Scott, in chapter three, considers the implications of these and other issues for the work of teachers and trainers.

Learning strategies

To achieve the objective of increasing skill levels in the workplace, teachers and trainers need to shift their focus from teaching and training to *learning*—from providing training programs to devising ways of encouraging students and workers to become learners. This is the major theme of the second section of this book

This emphasis on learning is not to suggest that there is a dichotomy between teaching/training on the one hand and learning on the other. Rather it is suggesting that if Australia is to produce the skilled workforce that it needs to become competitive, we need, among other things, to overcome attitudes to education and learning which are deeply ingrained among workers at all occupational levels. The best way of doing this is by providing new types of learning experiences which are as different as possible from the past experiences of most of the workforce.

To do this, teachers and trainers will need to come to terms with three related areas of practice:

- Developing the *higher order competencies* needed in the knowledge-based economy of the future—analytical and planning skills, logical and critical thinking, the ability to turn abstract ideas into concrete strategies, the ability to work in a team, communication capacities, a desire to produce high-quality products.
- Using *adult learning principles* which emphasise the responsibility of the learner and view the teacher/trainer as a facilitator of learning.
- Accepting that *informal and incidental learning* are vital to workplace learning.

The importance of higher order competencies

The ability to develop the higher order competencies outlined depends on three things:

- The validity of the competency standards that are developed for each occupation (it is essential that competencies are seen holistically rather than as a series of tasks to be ticked off on a check-list).
- The capacity of the trainer to translate these into broad education and training curricula.
- The use of training and assessment strategies/techniques which can assess the identified competencies and are based on adult learning principles.

Adult learning principles

There have been many attempts to distil the principles of adult teaching and learning, resulting in hundreds of principles being identified. It is, however, possible to group most of them under a small number of categories as Tennant (1991) points out The following discussion is based on Tennant's framework:

- Acknowledging and promoting self-direction in learning.
- Acknowledging the experience of adult learners.
- Establishing an adult learning relationship.
- Meeting the needs of adults.

As is well known, in the 1970s Malcolm Knowles suggested the importance for adults of self-directed learning. His basic proposition was that adults were able to learn for themselves as a result of inherent cognitive and personality characteristics. The role of the adult educator in Knowles' view was to facilitate this capacity through the process he termed *andragogy*. As Foley (1991) points out, this view of self-direction has been subjected to considerable criticism since the 1970s. Brookfield (1985) and Mezirow (1981), for example, have suggested that Knowles' views were politically conservative and these authors have extended the concept to include the notion of critical reflection, in which adult learners are encouraged to examine the hidden assumptions that unknowingly guide their lives. Irrespective of where teachers and trainers stand on these issues, it will be a difficult task to translate a desire for producing self-directed learners into practice.

As Foley points out in this volume, the key practical issue which teachers and trainers face is how to increase the self-direction of learners, given the resistance of students/trainees to accepting responsibility and institutional hostility to passing control from teachers/trainers to learners.

The need to acknowledge the experience of adults is accepted as fundamental to adult education practice but there is no consensus about how adults learn from experience. There has been considerable work by psychologists over the past two decades on the nature of adult intelligence and cognitive processes. This work has stressed the capacity of adults to learn at any age and the particular characteristics of adults' learning: the ability to make judgments and solve problems, to think critically and to develop specialised knowledge.

As has recently been pointed out by Boud and Walker (1990), if relatively little is known about how adults learn from experience, even less is known about how the process might be facilitated. Their general theme is that individuals need to be able to reflect on experience in order to learn from it and that most current educational practice does not leave sufficient time for this to occur. This is an important general point which trainers and teachers need to consider. They argue further that the essence of learning from experience is to be found in the relationship between the learner and the learning milieu. The key processes are noticing (becoming aware of what is happening in the learning situation) and intervening (taking action in the learning situation). They suggest that teachers/trainers can facilitate the process of noticing by using various techniques to get students to consider their own intentions before a learning event takes place. Examples include questioning in pairs about why individuals are undertaking the learning, what they would do if certain things happened and so on. After the learning event has begun, the facilitator can point out things that might have gone unnoticed, as would occur, say, in a master class in singing. Similarly with intervening, teachers can use case study material, role plays etc., to practise intervening and help students cope with the anxieties of entering new situations.

The nature of the relationship between adult learner and teacher/trainer has been considered widely by adult educators. It is generally accepted that it should be characterised by mutual respect, openness and equality. Yet, as is pointed out in chapter five, this is not always easy to achieve given the realities of institutions and the expectations, derived from childhood, that many adults have about the roles of teachers—as professor, judge, guardian, authority figure.

Meeting adults' needs is another key adult learning principle. The question for teachers and trainers is how to do this given the variety of needs which can be identified: individuals' psychological, and cognitive needs, community needs, group needs. There is a vast literature on individuals' needs and their implications for teachers and trainers which cannot be outlined here. It is summarised by Tennant (1991).

This literature points to the need for teachers and trainers to be aware of the complexity of individual differences, of learning styles, personality and broader psychological make-up and to see it as a responsibility to take this into account when planning learning experiences.

Informal and incidental learning

The importance of informal and incidental learning in the workplace has only recently been recognised. As Marsick and Watkins (1990) argue in a recent book on the subject, most workplace learning is of this kind yet very little is known about how it actually occurs. In this they echo the arguments of Boud outlined earlier. If these arguments are accepted they have enormous implications for teachers and trainers. For teachers this means a change of focus, away from teacher-dominated lessons to the facilitation of experiential education and the use of self-directed learning techniques such as self-paced learning. For trainers it means a re-assessment of the whole approach to training. Techniques such as structured mentoring, coaching, using learning contracts and using journals to promote reflection will take their place alongside such traditional strategies as workshops and formal training sessions. The aim will be to create a learning organisation where individuals take responsibility for their own learning and where learning is a normal part of everyday work activity.

Some key strategies which can be used to implement these general principles are detailed in chapters four to ten which cover communication capacities of teachers self–paced learning, self–directed learning, mentoring, ways of developing critical thinking, using games and simulations, and ways of running workshops.

Assessment

The new context within which teachers and trainers work and the new learning strategies which they are being expected to employ have significant implications for assessment strategies. First, there are a new range of issues that teachers and trainers will have to deal with. These include:

- Assessment of prior learning
- Assessment of competency standards
- Need for self assessment of teachers/trainers and students /trainees)
- Recognition of the importance of incorporating adult learning principles into assessment techniques

These new issues do not mean that all the usual techniques will need to be abandoned. There will still be a need on occasions to assess knowledge in isolation from any outcome as has been the practice in the past. However the concentration in vocational education and training on outcomes does mean that there must be more consideration of how to assess knowledge in context than has occured in the past. It has been usual to infer from tests of knowledge that students and trainees possess certain attributes which will enable them to perform certain job tasks. The changes may mean that greater attention will need to be given to more direct assessments where the inference is at a much lower level. Naturally this will cause some problems for vocational teachers unless they have access to real workplaces. Of course the possibility exists of the use of simulations and other techniques as is pointed out by the authors in this section.

There is likely too in the new era to be a greater emphasis on the gathering of evidence of competence over time and its presentation in a greater variety of ways. In the assessment of prior learning, for example, assessment of actual performance can be supplemented by evidence from peers and supervisors as well as exemplars of past work.

While these issues will be challenging, there is a suggestion at least, in some quarters, that the assessment of outcomes in the workplace will not be a major problem (Docking 1990). While such assessment will require the use of considered judgement in an area in which people are expert, it is unlikely that it will need a strong background in assessment theory. In addition if the competency standards are valid they should overcome the fears that have been expressed of bias and error in judgement. While it is true that the costs of assessment of workplace competence will be significant, the costs of *not* assessing individuals will be even greater in the longer term.

All these issues are discussed in chapters eleven to fourteen and practical examples of how assessment might be undertaken are outlined.

There is very little that is published in Australia on vocational education and training. It is our hope that this volume will be the first of many that examine the complex contextual issues of this sector and at the same time present some practical, but not simplistic, strategies for trainers and teachers to consider.

Andrew Gonczi
April 1992

Section 1 Policy context

This section attempts to outline the context and specify the challenges facing teachers and trainers and suggest how they might begin to meet them over the next decade.

There has been a heightened world-wide interest in vocational education and training over the past few years as technology has advanced and the knowledge needed to exploit it has increased. In the advanced countries, increased international competition resulting from the globalization and freeing up of trade has increased the urgency for countries to examine their education and training systems. Markets have also changed so that new forms of work organisation and more highly skilled workforces are needed for enterprises to be competitive in these new types of markets.

In Australia this has resulted in a series of reforms, not yet completely implemented, designed to increase the quantity and quality of vocational education and training.

The challenges for those at the front line of these reforms are formidable. The pace at which knowledge is becoming obsolete has increased so dramatically that expertise is becoming associated as much with the capacity to learn as it is with actual knowledge itself. Keeping up-to-date is increasingly difficult. This phenomenon also has obvious significant implications for the nature and content of curricula of courses and workplace training.

Given the explosion of knowledge, the method and strategies used to produce learning have also had to change. The aim of vocational education and training should not be to train the workforce for specific jobs, but to train it to be adaptable within a broad vocational area where underlying principles and concepts are as important as specific knowledge of processes and techniques. Of course this has always been a stated aim of vocational education, but one more honoured in the breach than the undertaking. The new context requires new teaching, learning and evaluation strategies and new ways of thinking among teachers. It also means that managers and all members of the workforce need to create a workplace where the strategies outlined in this book will flourish.

Chapter 1

Workplace reform and vocational education and training

Geoff Hayton

In this chapter Hayton examines changes in work organisation that have been made necessary by the lack of competitiveness of Australian industry. He argues that the best way to explain these changes is by using an evolutionary model which charts the development of firms through various phases. Each of the phases has different implications for the skill needs of its workforce. At the most advanced phase, a firm's workforce undertakes a wide range of roles, needs high level general skills and attitudes to work which facilitate innovation. Of course these changes have been anticipated by governments in Australia and form the basis of much of the training reform agenda. As Gonczi and Hager point out in chapter 2 the recommendations of the Finn and Mayer committees are aimed at developing a work force with these skills.

The implications of these workplace changes for vocational education and training are significant. Hayton suggests the need for changes in skills of teachers and trainers (an issue taken up in Scott's chapter), the need for broader courses, the possibility of more targeted short courses, and the possibility of combinations of courses being offered to individuals.

Introduction

Vocational teachers and industry trainers are aware no doubt that Australia is currently undergoing a period of significant economic change. The impetus for this has been the dramatic decline of commodity prices which commenced in the mid-1980s and low prices have persisted, with the exception of 1988 and 1989, into the early 1990s. This has focussed the attention of Australians on the fragility of their economy and the need to act urgently to reform it.

Over the last two decades the prices obtained for agricultural and mining products, the mainstay of our export effort, have undergone a long-term downward trend. Rather than accept a drop in living standards which is the logical outcome of our reduced income, Australians have borrowed money to pay for imports. This has resulted in a growth in foreign debt. Unfortunately when prices for our traditional exports have improved this has not helped reduce our debt. In fact it has had the opposite effect. Increased income has resulted in a surge in spending on imports which has more than offset the gains. Thus, one side of the problem has been the failure to save or to restrain spending.

The other side of the problem has been associated with production. Industry has been unable to produce enough goods of the right price and quality to sell overseas to offset the decline in traditional commodity exports. We also have not been able to produce enough goods of the right price and quality to satisfy domestic consumers and replace demand for imported goods. Until recently the long dependence on and relative success of commodity exports, coupled with high levels of protection for Australian manufacturers has meant that, outside primary industry and tourism, Australian industry has not had to confront international competition. Few manufacturers in Australia have tackled the work organisation and technological changes that have been occurring so rapidly elsewhere during the last decade.

One of the main forces bringing change over the last decade is the increasing sophistication of world markets in goods and services. Price and quality were established as the main components of market competitiveness, but service and flexibility (the ability to produce a wide range of goods) were increasing in importance in the 1980s. In addition, innovation is becoming an important component of competitiveness in the 1990s (Bolwijn and Kumpe 1990). The following diagram illustrates these trends. The relative importance of each component of competitiveness varies from product to product and service to service. Also, the time periods for these trends vary among industry sectors. However, the broad features of these trends in the markets for complex assembled goods (e.g. consumer electronic goods) are widely recognised around the world.

COMPONENT OF COMPETITIVENESS	PERIOD			
	1960s	1970s	1980s	1990s
PRICE	■	■	■	■
QUALITY		▨	■	■
SERVICE AND FLEXIBILITY			▨	■
INNOVATION				▨

Note:

▨	moderate component of competitiveness
■	substantial component of competitiveness

Figure 1: Changing Components of Competitiveness
From Hayton & Loveder, 1990

Workplace reform

To meet these new market requirements and in response to increasing international competition, enterprises are introducing competitive strategies involving workplace reform. New organisations are needed—for most industry sectors it is no longer sufficient merely to cut costs to become more efficient. To become efficient, produce quality, become flexible and innovate, firms will need to implement substantial changes in the workplace. Workplace reform is the introduction of new forms of work organisation accompanied by some or all of the following:

- introduction of new technology
- job redesign
- restructuring of industrial awards or enterprise agreements
- a higher skilled workforce by means of enhanced career paths and vocational education and training

For most enterprises in Australia the changes required to become internationally competitive are not easily planned and implemented, and usually require a multiphase process over a period of several years. A recent study of Australian firms compared with 'world-best' practice showed that, on average Australian firms need to improve productivity by 25% to catch up with comparable countries (Shann & Fitzgerald 1990). Success in international markets is not related to where we have come from or how much we have improved, but it is related to where we are now compared with the world's best. Many Australian firms have recognised this and have undertaken international best-practice bench marking to provide a target for improvement. This approach to bench marking involves the documentation of the world's best firms in terms of costs, quality and other factors for the particular market field the firm is in.

It is widely believed that to attain competitiveness in the 1990s in most industries, enterprises will require a transformation to a new organisation which produces quality goods or services and is efficient, flexible and innovative. The new organisation generally requires a highly skilled workforce, modern technology and an appropriate structure and culture. Many enterprises in Australia and other developed nations are adopting a strategy for change which is focussed on human resource development rather than technology. Technological change to processes will continue to be an important competitive strategy in the 1990s for most organisations, but not as central as in the past. A major challenge now for most organisations is human resource development.

Work organisation

What changes to work organisation are required to be competitive in the 1990s? For manufacturing Bolwijn and Kumpe (1990) have described a four-phase model in which the structural and cultural requirements of each phase are outlined (see figure 2). Research support for this model comes from case studies of large manufacturers in Europe and Japan.

Manufacturing organisations are evolving from the 'efficient firm' characterised by specialisation and hierarchical organisation to the 'quality firm' characterised by communication and co-operation. Further evolution to the 'flexible firm' is achieved in part by implementing a structure based on integration and decentralisation. Evolution to the final phase of the 'innovative firm' is achieved by retaining some features of all the previous phases and encouraging a culture of participation and democratisation. Descriptions are given in the box: the four phases. In reality, companies or parts of companies will never show the 'pure' characteristics of one phase. In harmony with this model are the descriptions of the bureaucratic and organic systems provided by Burns and Stalker (1961). The efficient firm and quality firm are bureaucratic organisations whereas the flexible firm and innovative firm are organic organisations.

ORGANISATIONAL PHASE	PERFORMANCE CRITERIA	STRUCTURE/CULTURE REQUIREMENT
Efficient firm	efficiency	specialisation and hierarchical organisation
Quality firm	efficiency + quality	communication and co-operation
Flexible firm	efficiency + quality + flexibility	integration and decentralisation
Innovative firm	efficiency + quality + flexibility + innovative ability	participation and democratisation

Figure 2: **The Four Phases of Development for an Organisation (adapted from Bolwijn & Kumpe 1990)**

Bolwijn and Kumpe assert that large manufacturing organisations are unlikely to skip a phase successfully. This principle is illustrated in figure 3. For example, to become a successful flexible firm an organisation needs to make two transitions, from efficient to quality (cultural change) and quality to flexible (structural change). In 1990 they perceived that most large manufacturing firms in Europe were in the transition from the quality firm to the flexible firm, though a number are still engaged in mastering quality.

Bolwijn and Kumpe's view of the changes occurring in work organisation and their skill implications is in line with the views of many other writers of the 1980s. Such writers are often referred to as 'post-Fordists'. The post-Fordists view the current changes in the workplace as being quite novel, and as a significant departure from 'Fordist' or 'Taylorist' systems of work organisation. Post-Fordists interpret current changes in the workplace as part of a widespread trend towards flatter management structures with greater autonomy and responsibility being given to shop floor/operative level staff. This is associated with a long-term trend of skill upgrading and multiskilling.

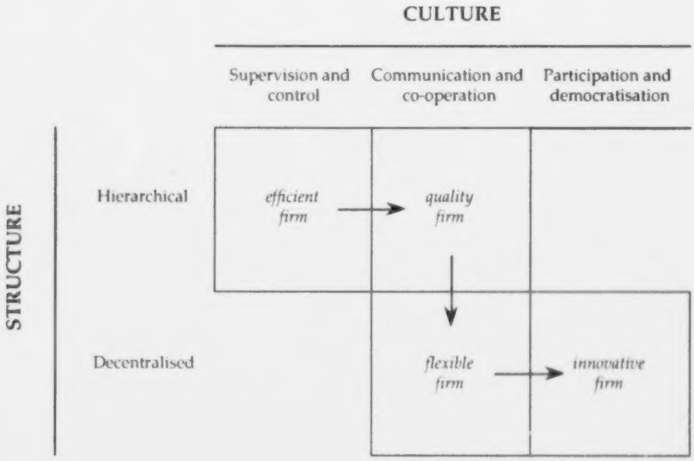
CULTURE
Supervision and control
Communication and co-operation
Participation and democratisation
STRUCTURE
Hierarchical
Decentralised
efficient firm
quality firm
flexible firm
innovative firm

Figure 3: Structural and Cultural Change Pathway

The four phases

Efficient firm

All efforts are directed at reducing costs in these companies: make it cheaper. The efficient firm produces a narrow range of products, tuned as it is towards the mass production of standard goods. It delivers competitively priced products of—in almost all cases—substandard quality, when measured to present-day quality levels. Organisational design is based on the creation of simple, repetitive tasks, deemed necessary for the production of fairly complex products using cheap labour. New technologies develop at a pace yielding ample time for R & D departments to devise new generations of products 'at leisure'.

The efficient firm separates line from staff, operation from control, planning from execution and individual jobs are split up to yield repetitive tasks. The aim is to run down the learning curve as fast as you can, both by the separation of jobs and by increasing scale. Within the growing organisation, there is a mushrooming of ever-more specialised staff functions. Managing is mainly planning and control. The organisation resembles a well-oiled, smoothly running machine.

Quality firm

All efforts are directed at the pursuit of quality as well as recognising the still necessary efficiency improvements. Quality is recognised as a strategic issue, for which top management's involvement and commitment are necessary. The whole of the company is involved in a long-term process of continuous improvement, encompassing products and processes, top management and operators/factory workers. Everybody is convinced there is money to be made through quality. Doing things right the first time is the best and cheapest way to run a business. The many changes necessary to achieve this goal amount to nothing less than a cultural shock for the efficient firm. Close co-ordination exists between product development and engineering, as well as between the technical and commercial sectors. Customer orientation, one of the specific characteristics of quality firms, is also based upon greatly improved information feedback systems, systematically collecting data from such varied sources as factories, competitors and customers. Flawless products through manufacturing perfection is at the heart of the firm. Design for manufacturing and building in quality right from the start of development, ensure a minimum of engineering changes and a maximum of manufacturing quality.

Dedication and precision, so necessary for achieving perfection, calls for motivated employees. There is a spirit of co-operation, in which people are assessed on results and much attention is paid to horizontal and vertical communication. 'The customer is always right' simply is not up for discussion any more. Satisfying a customer is really more important than pleasing the boss.

Flexible firm

In addition to cost reduction and quality improvement, efforts are directed at increasing speed: minimise the time needed for 'ore-to-customer store'. This also holds true for developing and introducing new generations of products. The flexible firm offers a wide and varied assortment of products, suiting the individualisation trend of the affluent clientele. The firm has a strong external orientation, keeping in close contact with external development in such areas as technologies, competition and markets. Short manufacturing throughput times are achieved by continuous flow production of very small batches using, among others, synchronised cycle times and short resetting times. Both dedicated and mixed-model production lines are used, depending upon the turnover of the various models produced.

The organisational design is based upon the creation of fast feedback loops, enabling processes to react quickly to changes, while retaining their reliability. The functional organisation of the former efficient and quality firms has largely given way to product-oriented organisations, consisting of relatively autonomous product-market combinations, business units, in which all primary and directly supporting functions are present. Communication lines are therefore short, the number of hierarchical levels is limited and central staff groups are kept to a minimum.

Most manual work is carried out in groups, employing multi-skilled employees, responsible for day-to-day operations. The inflexible mechanisations of the past have given way to flexible, often computer-aided, automation. Reducing the number of parts and components, designing families of products using standardised subassemblies and the introduction of CAD/CAM equipment all helped in speeding up the introduction of new products. At all levels extensive use is made of temporary groups, such as task forces and problem-solving teams, to deal with unforeseen events. This contributes to a climate within which changes are regarded as a challenge.

Innovative firm

The innovative firm is characterised by its ability to co-ordinate technological developments, applicable in separate business units. This means that the *strategic management of technology*, as it is called, is an important activity. Outwitting competitors by changing the game, is an important part of the company's

> success. Considerable use is made of multi-disciplinary *ad hoc* teams, generally manned by experts coming from all over the company. Lines of command to the various teams change with time, depending upon the state of the activities concerned. Integrating managers exist to direct and co-ordinate the various activities both horizontally—from research through development and engineering to production—as well as vertically along the product axis from components to end-products. The traditional line-staff distinction has lost most of its significance as 'teamwork' is the name of the game.
>
> An innovative climate is created and maintained by such measures as the employment of mavericks, the use of an open-door policy, including the possibilities of hierarchical bypasses and the promotion of diagonal communication, supplementing the horizontal and vertical communication of the flexible firm. The innovative organisation is a 'learning' organisation. Open relations are maintained with the outside world. As innovation is not restricted to new technologies, the results of creativity are not limited to the introduction of new products. They also lead to novel approaches in opening up new markets, setting up new organisations, designing new factories and offices, updating industrial relations and formulating new missions.
>
> The know-how of people determines their contribution rather than their position. As so much value is placed upon know-how, there is a dual career line—one in management and a scientific one—which to a large extent eliminates the tension between hierarchy and expertise. Status symbols have also been eliminated to a great extent. The innovative firm thus succeeds in using the knowledge and expertise of all its employees. This makes participation and human resource management more than an empty slogan. Coming up with alternatives—a necessary ingredient for an innovative organisation—is encouraged through an informal, open atmosphere.
>
> (Bolwijn and Kumpe 1990, pp. 49–53)

An accurate analysis of industry trends and skill changes requires the differentiation of the various industry sectors. Some authors have criticised the post-Fordists because their analysis generally does not differentiate industry sectors but instead provides a simple global narrative of industrial change and skill upgrading.

Littler (1991) and Williams et al. (1987) argue that some sectors are changing contrary to the trend described by the post-Fordists. For example, service industries, white-collar work and simple consumer manufacturing industries (e.g. clothing, furniture, toys, and food processing) are viewed as undergoing a contrary trend towards a more intense Fordist approach to work organisation, with de-skilling rather than upskilling. Rates of technological change and work organisation change in these industries have, until recent years, been slower than rates of change in the complex consumer manufacturing industries (e.g. electronics, cars) and process industries (e.g. chemicals, oil).

Skill requirements

Workplace reform is having a big impact on the skills required by the workforce. Consequently substantial changes to vocational education and training are needed. The changing skill requirements are a direct result of the structural and cultural changes occurring in workplaces in Australia and overseas, as described above.

The structural changes involve a move away from hierarchical management structures with specialisation of skills to decentralised management structures with multi-skilling. Various degrees of decentralisation and various approaches are possible. One approach being implemented is the creation of semi-autonomous teams with short communication lines, fast feedback loops, and proximity to the market. This team has a product–market objective rather than a specialised functional objective. The team has responsibility for production/service delivery, quality and customer satisfaction. Operational and key support functions such as quality control and machine maintenance are the responsibility of the team. The team has the ability to react quickly to internal problems (e.g. production or quality problems) or changes in the external environment (e.g. market changes). An Australian example of this type of approach is 'quick response manufacturing' at Palila Clothing Company.

These types of structural changes have many skill implications, and these have been discussed in many papers and reports published here and overseas (see, for example: Bailey 1990, Bertrand & Noyelle 1988, Bolwijn et al 1986, d'Iribarne 1987, Hayes & Jaikumar 1988, Hayton & Loveder 1990, Littler 1991, Mathews 1989, Shaiken et al.1986).

An important change is the need to extend peoples' skills so that they can undertake a wider range of tasks. This has been called multi-skilling and is an essential part of the workplace reform strategy of many Australian enterprises. It enables small teams of workers to be largely self-sufficient in skills while carrying out product– or service–market functions. It also allows flexibility of work organisation within each team, enhancing the ability to handle problems.

Palila Clothing Company

Palila manufactures a wide range of garments for government organisations, and companies such as King Gee, Can't Tear 'em, Stubbies and Yakka. Palila concentrates on the Australian market, but through other companies some of its products are exported to the United States and Japan.

To improve productivity and reduce time between order and delivery, Palila has changed work organisation and redesigned the jobs of operators. Traditional flow-line production with specialised operators on piece work has been discontinued. Palila has implemented quick response manufacturing in which production cells of 6 to 8 operators are responsible for making a complete product. The team is rewarded for productivity and quality. Machines are arranged in a 'horse-shoe layout'. The product moves around the horse-shoe. The progress (or lack of progress) of the product is visible to the team. Members of the team are multi-skilled, being able to operate any of the machines in the horse-shoe. Thus bottlenecks can be quickly attended to.

To support these changes, in-house training has been increased. Palila is negotiating with the Toowoomba College of TAFE to develop basic and advanced machining courses covering a wide range of skills. Another key element of restructuring at Palila includes an active consultative committee.

(From Hayton 1991, p.39)

Communication skills and inter-personal skills are becoming more important in decentralised work organisation structures. In particular, abilities that contribute to team building are recognised as increasing in importance. In many workplaces in Australia there are high proportions of workers from non-English speaking backgrounds and workers with low literacy levels. Workplace communication problems are becoming acute in these cases where workplace reform is being implemented. Government and industry programs to improve English speaking and literacy skills of workers have recently been stepped up to address this problem.

Implementing flexible decentralised structures requires changes of attitudes at all levels in the enterprise. Day-to-day control of production or service operations needs to be delegated from middle managers to team members. Managers must be prepared to relinquish some of their traditional tight control over most aspects of production or service operations, and operators must be prepared to accept greater responsibility for production and quality objectives. New process technologies give enterprises the choice of centralising or decentralising control. Research indicates that firms in the US are giving up the opportunity to decentralise control. Shaiken et al. (1986) concluded from case studies of US manufacturing firms in the early 1980s that programmable technology and flexible manufacturing systems were being implemented in a way that tended to increase production control by managers, rather than increase control at the shop–floor level. This contrasts with the trend towards greater shop–floor control in European manufacturing firms. There has been little published research in Australia on this issue.

In addition to structural change, 'cultural' changes are occurring in workplaces. Reformed workplaces have cultural characteristics of communication and co-operation rather than an emphasis on supervision and control (Bolwijn & Kumpe 1990). Additionally, participation and democratisation are characteristics of the innovative firm. Significant changes in attitudes are required by people at all levels in the organisation in order to attain these characteristics in the enterprise. The US Manufacturing Studies Board (1986, p. 21) defines the 'culture' of a plant as the pattern of beliefs about what is right, important or acceptable, shared by the people who work there. Figure 4 lists the changes in practice the board believes are needed to implement effectively advanced manufacturing technology.

ORGANISATIONAL ASPECT	TRADITIONAL PRACTICE	SHIFT TO PRACTICE COMPATIBLE WITH ADVANCED MANUFACTURING TECHNOLOGY
Authority	Base on position	Base on knowledge
Decision making	Locate close to the top	Locate close to required action
Employee	Limited knowledge and skill	Enhance knowledge and skill
Information	Closely control	Share widely and use a number of media
Rewards	Reward individual performance	Reward teamwork and collaboration
Status	Highlight differences in attire, parking, eating facilities, and so on	Mute such differences
Supervision	View supervisor as 'watchdog'	View supervisor as resource

Figure 4: Plant cultural change required to introduce advanced manufacturing technology
(Adapted from table 4 in Manufacturing Studies Board 1986, p.22)

It is clear that workplace reform will bring great changes to the skills required by the workforce, particularly at operative level. Operatives in manufacturing and service organisations will need higher order skills of critical thinking and problem solving. For example, the common approach to continuous improvement involved the encouragement of analysis and discussion of problems by small groups of workers. Many operative and maintenance workers will need a combination of specialised technical skills and understanding of systems. In addition, as discussed above, they will need new attitudinal qualities. These changes are described by d'Iribarne (1987, pp. 8-9) as follows:

> Operatives and their supervisors are now expected not just to react to events and single incidents but to anticipate them and take action. This broadening of the abilities demanded is radically changing the basic skills needed. Operatives must be capable of analysing and thinking for themselves. In addition to their basic technical knowledge, they must be capable of lateral thinking so that they can apply that knowledge within certain frames of action. They must also possess what, for want of a better term, will be referred to as the 'behavioural and attitudinal qualities' of forethought and commitment to the work they do. These will be determined by their 'social skills', their value systems and, in the final analysis, their education. It is altogether logical that the new skills expected of workers extend far beyond technological expertise, raising the question of what basic standard of education is required of skilled operatives.

In enterprises that decide to include innovation as part of their competitive strategy, the creative abilities of the workforce will be important. In the innovative firm described earlier, the whole culture of the organisation encourages creative contributions from all employees on a full range of enterprise concerns, including developing new products and services, opening up new markets, setting up new business units and improving processes and procedures.

Implications for vocational education and training

It is difficult to be precise about the implications of workplace reform because of the uneven rate of change and variation in the nature of changes between industry sectors. The following discussion of the implications of workplace reform for vocational education and training is based on the premise that workplace changes seen to be emerging in enterprises in Australia will continue and will spread to most industries, and that the nature of the changes broadly will be similar to trends documented in the United States and Europe.

The need for a more skilled workforce associated with workplace reform is expected to have an overall effect of greatly increasing the demand for vocational education and training in Australia. The increased demand is being driven both by industry needs and by government policies.

Government policies on vocational education and training aim to increase the quantity and quality of vocational education and training to support workplace reform. The report of the Australian Education Council Review Committee of 1991 (the 'Finn Review') recommends that a target should be adopted of almost full participation in vocational education (or academic courses) for 20-year-olds by the year 2001.

In the 1990s the completion of an appropriate initial vocational education course will be required of most people entering the workforce. The change will be marked for occupations which formerly were described as 'unskilled' or 'semi-skilled'. For operator-level occupations in manufacturing, for example, an entry-level TAFE course entitled Engineering Production Certificate is currently being developed nationally.

The Commonwealth Government is expecting a large increase in training effort by industry. To promote more training expenditure by medium-to-large-size enterprises, the government introduced the Training Guarantee Act in 1990. Enterprises with payrolls greater than a specified minimum are required to spend a minimum of 1.5% of their payroll on 'structured' training. Various Commonwealth and State government initiatives are aimed at widely introducing competency-based training into TAFE with the expectation that this will greatly improve the quality, relevance and flexibility of TAFE's vocational education courses. Such policies are discussed in some detail in chapter two.

The restructuring of industrial awards, with provisions for the establishment of skill-related career paths, is also contributing to the push for a more skilled workforce in Australia (Curtain and Mathews 1990). Skill-related career paths give employees incentives, such as increased pay and more satisfying jobs, to progress along the career ladder. Vocational education and training will need to be provided to support this progress. Indeed, unions and employees themselves are demanding that such training be provided.

An example of a skill-related career path, which is defined in terms of general competencies, is the system being introduced by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The system involved the adoption across the entire organisation of a set of general competencies to serve as a basis for promotion via demonstrated competence levels.

The competencies are problem solving, application of knowledge, job impact awareness, independence, communication, resource management, adaptability and scientific innovation. With the exception of scientific innovation, which only applies to scientific staff, all competencies are required to be demonstrated by all staff, from canteen workers through to principal research scientists, with the required level of performance increasing as you move up through the ranks. Such a scheme will obviously require a sophisticated assessment methodology providing details for every level of every occupational classification, if it is to be implemented successfully.

Workplace reform also is affecting the type of vocational education and training required, and this will present many challenges for vocational educators and trainers in industry. Some of the important challenges related to workplace reform are outlined here. A more detailed discussion of key challenges facing vocational educators and trainers is given in chapter three.

Vocational educators and trainers will be asked to help bring about changes in the content of programs, course structures, and teaching methods. It is expected that vocational educators and trainers will broaden their roles, increasing their involvement in needs analysis, program development, accreditation and evaluation. We are seeing an increase in co-operative training arrangements between industry and vocational education providers, especially TAFE, as a means to provide high quality education and training that keeps up-to-date with changes in technology and work organisation. It is likely that TAFE teachers will help to negotiate these as well as conduct programs at industry sites and training centres.

The structural changes in work organisation, involving a move away from centralised to decentralised management and the formation of semi-autonomous work teams, mean changes in the skills required for each member of the workforce. The range of skills required will vary considerably among enterprises and among work teams. In general some specialisation of skill is likely to continue but each worker will require a wider range of technical skills to give the flexibility that will be required of work teams. This requirement, often termed multi-skilling, means that it is likely that vocational courses will need to provide a broader range of skills.

Vocational courses will need to have the flexibility to provide different mixes of skills for different individuals. Two ways of achieving this flexibility are:

- offering a wide range of short courses and training programs so that individuals can choose any combination of courses and undertake additional training when required;

- offering longer courses with course structures that allow high flexibility—an example of this is the new national trade certificate course for the metal industry. The course has a modular structure which allows individuals a high degree of freedom to choose various combinations of modules.

As described earlier, cultural changes in the workplace will be required to achieve simultaneously efficiency, quality, flexibility and innovation in products and services. In particular, this means that new attitudes and an expanded range of non-technical skills will be required, as workplaces change to a culture of communication, co-operation, participation and democratisation. The workforces of enterprises making these transitions will need a wide range of 'higher order skills'. Such skills include: analytical and planning skills, logical and critical thinking, creativity, team skills, and communication skills. To develop these skills, the content and methods of teaching of vocational education will need to be revised. This issue is discussed in chapter seven: 'Teaching for critical thinking'.

A deeper challenge facing vocational educators and trainers is the need to justify greater amounts of resources for vocational education and training. The relationship between vocational education and its economic benefits is not a simple one, so the task for vocational educators is not easy. Part of the answer is to help decision-makers view higher skill levels, and vocational education and training, as a vital component of the competitive strategy for the enterprise and the industry. Governments have helped to raise awareness of the importance of training through actions such as the Training Guarantee Act. The current rhetoric on skill levels and workplace reform in Australia, and the strenuous efforts of many enterprises to implement significant workplace change, provide an opportunity for vocational educators and trainers to help place vocational education and training in a high position in the strategies of enterprises and whole industries.

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Chapter 2

The policy context for vocational education and training

Andrew Gonczi and Paul Hager

In this chapter Gonczi and Hager examine the major international and national factors which have created the set of difficult challenges facing vocational educators and trainers today. They outline the major changes in vocational education and training taking place in a number of OECD countries and point out the similarity between them and changes currently being implemented in Australia.

Trainers and vocational teachers will need to develop in trainees and students a new range of skills and capacities. To be able to do this they will, themselves, need new skills, attitudes and techniques, skills and capacities dealt with in sections two and three of the book. The key to improving the quality of the workforce's skills in Australia is the setting up of a national competency framework which will guide training and help implement the new industrial relations system which will base wage increase on skill levels. The authors argue in favour of such a framework so long as the nature of competence is interpreted broadly to include higher level capacities such as critical thinking, communication skills, team work and so on. They point out that the most advanced industrial countries have long abandoned a narrow task-oriented approach for workplace competence.

While competency–based standards will often lead to a competency–based training system this does not necessarily mean a system of self-paced learning. It is possible to develop competencies using a variety of learning strategies of which self-paced learning is only one. This issue is taken up in chapter four by Dawes, who points out some of the strengths and weaknesses of self-paced learning and its relationship to other adult–education strategies.

The authors conclude that while the changes facing teachers and trainers are formidable, at the same time they offer exciting opportunities.

Introduction

The challenges facing trainers and vocational teachers, that have emerged from the workplace reforms outlined in the first chapter, are formidable. Nevertheless they are not unique to Australia. Many of the developed countries have attempted to introduce similar reforms over recent times and Australia has much potentially to learn from them. While the traditions and forms of vocational educational and training in Australia are largely British, there is a need to look to more economically successful countries for inspiration and to blend their best practices to suit our specific needs.

In some respects this process has already begun. The policy framework which is the subject of this chapter demonstrates that we have taken much from overseas but that we have begun to develop policy and implement changes in vocational education and training which are an unique blend of ideas:

- The development of the Australian Standards Framework which links the Australian industrial framework with the development of workplace competence.
- The development of the funding arrangements to encourage more training.
- The development of the notion of key employment competencies to be developed by schools, vocational colleges and trainers in industry.
- The encouragement of greater participation in education and training for youth and the development of a variety of paths for gaining this training.

Overseas developments

The process of structural change is a phenomenon common to most OECD countries. As has been pointed out in a recent report of a government overseas mission (COSTAC 1990) the need to improve workplace skill is recognised in even the most highly successful economies. Thus, Germany, the USA, Canada, the UK and Sweden have all recently initiated improvement in their vocational education and training systems as a major strategy for increasing their competitiveness.

These reforms have included in most of these countries:

- Moving to local decision making in the delivery of training.
- Removing training and vocational education from the exclusive control of governments.
- Breaking down the dichotomy between vocational and general education and thereby developing an integrated set of options for all youth up to age 18/19.
- Integrating education and training by such methods as assessment of prior learning, articulation arrangements, setting competency standards for general education and developing new models for upper years of schooling which link industry and education.
- Encouraging lifelong training models in industry.
- Developing research into vocational education and training.
- Improving training opportunities for adults.
- Improving the training of trainers.

- Setting up national skill/competency standards as a way of improving vocational education and training, and also developing assessment methods appropriate to such standards.

In Germany there is a long tradition of delegating vocational training to local authorities such as a chamber of manufacturers. Vocational training is delivered by industry either in-plant in large firms, or, where firms are smaller, in centres funded by a number of firms. These centres are used by adults as well as young trainees to undertake training.

To ensure consistent national standards, however, the German Federal Government in association with the Federal Research Institute in Vocational Education (BIBB), has established a set of uniform competency standards for all industries. All on–the–job assessment is competency based. It is important to note, however, that these standards are not conceived as a series of tasks which need to be assessed individually on a checklist. Rather the standards themselves and the assessment of them relate to whole work roles.

In addition to the on-the-job training, all trainees are required to attend vocational school where they learn vocational theory and undertake general education. This so–called Dual System covers most occupations and 70% of youth enter the workforce through it. Every industry trainer must hold a trainer certificate and have post-trade qualifications and experience.

In the USA there has been a series of reforms designed to facilitate the transition from school to work and improve workplace training. These focus on the partnership between industry and education and include such things as the development of an apprenticeship system based on the German dual system and setting up new education and training models linking local high schools, community colleges and local industry.

In the UK the most recent developments have been the attempts to improve the effectiveness of the training and vocational education system through the setting up of national competency standards for all industries.

These standards developed by 'lead bodies' will guide both vocational education curricula and the work of the new training and enterprise councils. These councils promote training in their local areas and purchase training from a range of providers. Their aim is to ensure that training and vocational education is both responsive to industry needs and meets the national standards.

Implications of overseas experience for Australia

Given the different traditions and educational arrangements in most of the countries discussed above, it is never easy to decide what ideas Australia might adapt advantageously, if any. Nevertheless the attempts to develop a competency-based training system, to decentralise (to some extent) decision making in vocational education and training, to give more power to industry training councils, to develop the traineeship system, show that we are moving in the same direction as other countries.

The developments in vocational education and training in the OECD should, however, be a warning to Australians. While all of the countries discussed above have economic problems, they have economies which are more balanced and more flexible than our own. The fact that they are so committed to seeking ways of improving the skill levels of their workforce means that we can take no comfort from the fact that they are facing some problems similar to our own. In an increasingly competitive world, our reform efforts will need to be more vigorous than those of the other developed countries. Fortunately the urgency and magnitude of the task has been recognised by all the parties—the unions, industry and all governments irrespective of political colour.

Policy initiatives in Australia

In 1987 the ACTU in their *Australia reconstructed* (1987) pointed out the need for reform of the existing award structure and the need for a greater training effort from industry. These ideas were taken up in the Federal Government's landmark paper *Skills for Australia* (1987). This document was important for a number of reasons:

- It was the first official acknowledgment of the vital part that skill formation had to play in structural change in Australian industry.
- It marked a significant change in government thinking about the role of education, particularly vocational education, and its relationship to national goals. It revealed the government's determination to harness the education system to fighting Australia's major economic problems. Not only did the government suggest that there was a need for greater participation in education and training and for more private investment in training, but also that the balance and emphasis of the system needed to change so that it could better meet the long-term needs of the economy and the labour market.

Skills for Australia was particularly critical of the directions that TAFE had taken since the mid–1980s and suggested that continued Commonwealth funding would depend on improvements in TAFE's response to industry needs and on its willingness to provide courses in a more flexible fashion. These policy directions have been reinforced by State governments. Over the past few years all State governments have begun to reorganise their TAFE systems—in particular, decentralising decision making with the aim of making TAFE more responsive to industry needs.

The thinking behind the suggested changes to vocational education has been paralleled by initiatives in higher education. In the White Paper, *Higher education; A policy statement* (1988), the Federal Government sought to develop a balance between the traditional independence of the system and the perceived need to link it more closely with the skills needs of the economy. While these reforms have not been accepted enthusiastically in some sections of higher education, many outside (and inside) the sector agree on the need to develop better links between universities and other education providers as well as closer contact with industry and the wider community

These major reports marked the beginning of a change in education policy in Australia. For the first time education was being openly considered in utilitarian terms and being judged by the extent to which it was succeeding in advancing 'national goals'. Those who have argued recently in favour of the new direction, have spoken of it in terms of increasing the quality and flexibility of the labour force on which Australia's economic future depends. Those opposed to the changes have argued that the very notion of 'national goals' needs to be challenged and that the role of education in critically examining government policy is increasingly being eroded by selective government funding, the introduction of rigid performance indicators and the reduction of institutional autonomy.

This debate has been recently playing itself out in the issue of the quality of the higher education system. The discussion paper released by the higher education council *The quality of higher education* (Higher Education Council 1992) argues in favour of an 'outcomes' approach to higher education where graduates emerge from the system with certain attributes which would equip them for the world of work. If this notion of quality is accepted then not only will the time-honoured, but largely meaningless distinction, between vocational and general education be further eroded, but the traditional gulf between higher and vocational educations will have been narrowed.

Reforms outside the formal education system have also been seen as essential by the government. In *Industry training in Australia; Need for change* (1988) it sought to stimulate discussion on the need to improve the quality and amount of such training. What was clearly identified in this document was the fact that training was very uneven and that the overall industrial environment contained major disincentives to training. It was argued that a significantly greater training effort was needed in Australia and that changes to the training system had to take place in tandem with changes in industrial relations and wider micro-economic reform. Thus, changes to training and vocational education need to be considered within the context of workplace reform and reform of industrial awards.

Funding of training

In its consultative report on Australia's training needs, the National Board of Employment, Education and Training (NBEET 1989) noted that the issue of funding was highly contentious. Essentially, the debate centred on whether the government should impose a training levy on enterprises or whether it was sufficient to rely on voluntary industry funding arrangements. Despite considerable opposition from the business community, the Commonwealth Government decided to impose a training levy. This levy known as the Training Guarantee was introduced in July 1990.

The legislation requires employers with payrolls in excess of $200 000, to spend at least 1% of pay-roll in 1990–1991 and 1.5% from July 1992, on high quality, employment-related training. The aims of the levy are to improve the quality of training, encourage employers to adopt structured training programs and change attitudes to training amongst employers.

The Training Guarantee Scheme (TGS) allows expenditure on a wide variety of activities to count as eligible training. This includes capital expenditure and leasing of equipment used for training as well as structured training programs. Such programs must be conducted by 'qualified' trainers either in-house or externally, be designed by a person who is knowledgeable in the skills to be acquired and in ways of imparting them. In addition, skills which courses aim to develop need to be identified in advance of the course and they should be able to enhance employment-related skills.

The TGS implementation is supported by the National Training Board which registers the registered industry training agents (which advise on expenditure and provide certificates of compliance) and also advises the Minister.

The extent to which the TGS is succeeding in its aims awaits evaluation. It is certainly too early to accept the anecdotal evidence published in the daily press about widespread cynicism and attempts to get around the legislation, although there will undoubtedly be some instances of this. More worrying is the criticism that the TGS places its emphasis on courses rather than training, (and thus undervalues on–the–job training) that it sets no standards of how the training transfers to the job, and that there is no control over the standard of train -the-trainer courses (Noone 1991). These criticisms need to be examined alongside future evaluations.

Improving the quality of training

While the new award system and the training guarantee have had the effect of ensuring a vast increase in the *amount* of training they do not of themselves guarantee its *quality*. It is essentially for this reason that in April 1989 the Special Premiers' Conference committed all State and Territories to the development of a competency–based standards training system. It has since been agreed that the system would be substantially implemented by 1993.

What are competency–based standards (CBS) and competency-based training (CBT) and why are they being introduced in Australia in the 1990s?

Competency standards and the standards framework in Australia

It was about 30 years ago that the competency movement was born. As it has been widely interpreted and implemented in trades and middle–level occupations the competency-based movement has close ties to the more general behavioural objectives movement in education. That movement, which began in the 1950s in the United States and was popular in the 1960s and 1970s, promoted the detailed specification of the goals of educational courses as lists of observable behaviours that students are expected to demonstrate at the completion of a course.

To facilitate the achievement of those objectives, educational programs were organised into discrete, sequenced modules and 'standard-based' or 'criterion-referenced' tests were used to establish whether or not students had mastered the objectives of each module. In a criterion-referenced test it is usual to match test questions to specific objectives and to treat success on an item (or on a fixed percentage of items relating to the same objective) as evidence that the objective has been 'mastered'.

So competency-based standards in trades and middle–

level occupations typically involve:

- the analysis of workplace tasks or roles;
- the development of a list of tasks (sometimes called a competence schedule) with one or more performance criteria for each task;
- the construction of education/training/assessment programs based on this list.

Because the focus is on behavioural aspects of job performance rather than attributes of the practitioner, 'tasks' are often described inter-changeably as 'competencies'. This approach to competency analysis is really little more than occupational analysis and has distinct limitations even for work that is essentially manual. It leads to a 'competency' check-list that can rapidly become unwieldy and impractical. A further doubt concerns the validity of such an analysis; i.e. can the capacity to perform a long list of tasks be equated with *overall* occupational competence? The tendency to break up an occupation into the tasks and sub–tasks often will ignore the connections between the tasks and the capacity to decide when a task needs to be done. Thus while there is obviously a need to analyse the tasks inherent in an occupation, there is also a need to look at the connections between them and the attributes needed to undertake the tasks in the combinations needed in the occupation.

Competence in an occupation involves more than the mastery of a large number of discrete tasks. It includes the capacity to *integrate* skills and knowledge and, often, attitudes into the actual practice of work. That is, it needs to take into account the attributes of the practitioner and the qualities needed by individuals which enable them to undertake their work (Gonczi et al. 1990). As Scott (1991) has recently argued, a competent vehicle builder not only needs a set of technical skills and communication skills but also must be able to show initiative, be flexible, be creative and adaptable and be able to anticipate problems.

Over the past few years, there has been a widespread revival of the thinking underlying the earlier behaviourism but expressed in a new form—the language of competencies. This revival began in the UK as a reaction to a vocational education system that was locally based and perceived to be unresponsive to the needs of industry and the national government's objectives. As Britain moves closer to incorporation into the EC, additional pressures have emerged to develop a competency-based education and training system, particularly the need for a common basis for certification. The fact that Germany has long had a standards system has also been influential in the adoption of such a system in the EC.

In Australia the reasons for the adoption of CBT are similar to those in Britain. The control by the States of all education except higher education has meant that across Australia there have been widely different curricula in schools and post-secondary education. Different certification procedures for different occupations and inconsistent approaches to assessing overseas qualifications have been related problems. In addition the desirability of recognising prior learning (see chapter thirteen for a detailed discussion) and for portability of qualifications and competencies over industries is widely recognised. Given the difficult economic situation currently facing Australia, all governments have agreed on the need to adopt a national focus for training, certification and education. Hence the commitment of State and Commonwealth governments to set up national skill /competency standards.

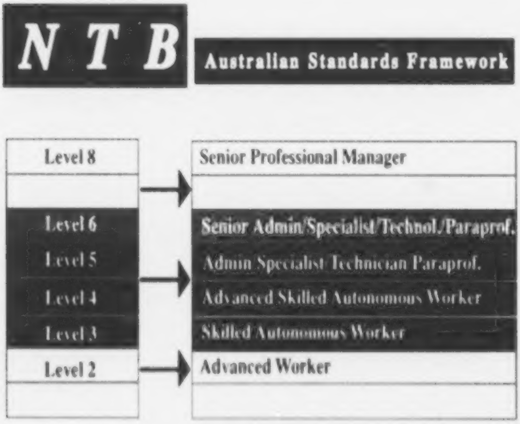
The National Training Board

To oversee the implementation of the CBS system the Commonwealth and State governments formed the National Training Board in 1990. The board released its *Policy and Guidelines* in early 1991. The role of the board is to examine and endorse the competency standards developed by the various industries and occupations. While the work of the board has only recently begun, there is a clear indication that the approach it has taken to what constitutes competency is the broader approach outlined above. It specifically states that its concept includes: 'all aspects of work performance, not only narrow task skills are included'. The most important sections of the guidelines are those outlining the Australian Standards Framework and the format of the standards.

The framework

- There are to be eight occupational levels, which will serve as reference points for the development of standards and for vocational qualifications. In addition they provide a benchmark for non-formal learning or skills gained overseas or skills gained from in-house training. For example, at level *three* a worker would be a skilled person who might have a trade certificate or equivalent. Such a person would in general be expected to be able to work in a self-directed way on complex tasks applying theoretical knowledge and manual skill. Thus, to continue the example of the welder, s/he would be considered to be a level three worker who had either developed their competencies on the job or by completing a trade certificate at TAFE. If s/he picked up extra competencies either on the specialist job at BHP, or by doing a post-trade course they would be seen as level *four* workers. However, within their own industrial award there are a number of classifications through which they could move at this level (c7 c8 c9). By having the standards framework as a reference point, all workers would know that they need a post-trade qualification or extra competencies to advance through to this level.

- Standards will not be incorporated into awards though they will be closely related to them. The reason for this is twofold. Awards by their nature are difficult to change. Competency standards on the other hand can be changed without recourse to industrial tribunals when there is a need to do so, as for example when some new technology significantly changes the nature of the occupation. Secondly, competency standards potentially enable individuals to identify competencies which can they carry across industries—significantly increasing workforce mobility.
- The framework will encompass occupational standards which exist irrespective of the industry in which the occupation is based. It will also encompass the standards needed for a particular job in an industry or sector of an industry or even in a particular enterprise. For example, a welder will need certain competencies irrespective of the industry in which s/he is working. If s/he is employed in the steel industry then specific and additional competencies will be needed. If s/he is employed at BHP in a specialist area, s/he will need further competencies still.

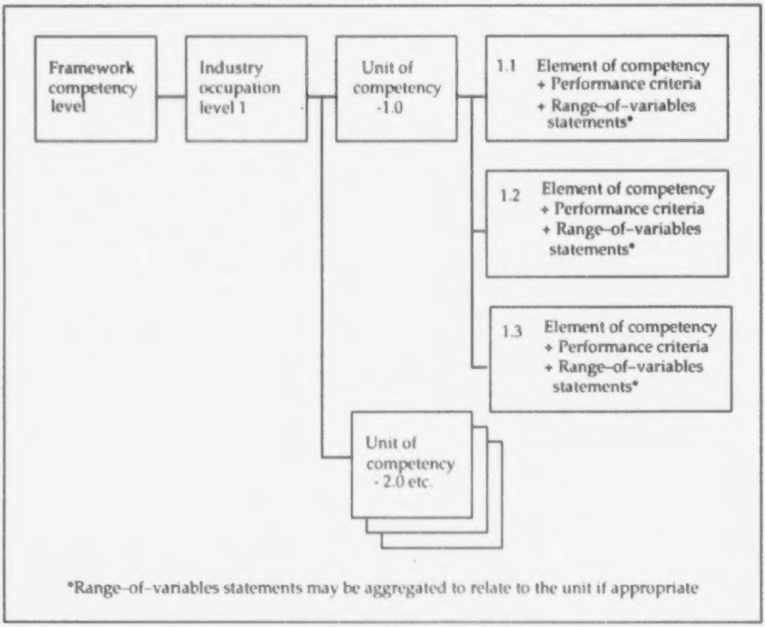

N T B
Australian Standards Framework
Level 8
Senior Professional Manager
Level 6
Senior Admin/Specialist/Technol./Paraprof.
Level 5
Admin/Specialist/Technician/Paraprof.
Level 4
Advanced Skilled/Autonomous Worker
Level 3
Skilled/Autonomous Worker
Level 2
Advanced Worker

National Training Board
September, 1991

The format

To ensure consistency the board has insisted that a competency standard consists of the following parts:

A title, a *unit* of competence an *element* or task to be undertaken, *performance criteria*, and *range–of–variables* statements, which describe specific factors about the context in which the work is to take place. The following example illustrates the format.


Framework competency level
Industry occupation level 1
Unit of competency -1.0
1.1 Element of competency + Performance criteria + Range–of–variables statements*
1.2 Element of competency + Performance criteria + Range–of–variables statements*
1.3 Element of competency + Performance criteria + Range–of–variables statements*
Unit of competency - 2.0 etc.

*Range–of–variables statements may be aggregated to relate to the unit if appropriate

Establishing standards

The actual development of these standards will be undertaken by the industrial parties with advice from the board and the standards will be ratified and registered by the board. Each industry will be represented by a body which is acceptable to the industrial parties and has expertise in development of competencies. Herein lies one of the dangers of the CBS system as it is currently conceived in industry. While it is clear that the NTB has an understanding of these issues, it is also the case that its agenda is largely set by industrial relations considerations. Hence there is the danger that standards will be agreed to because they satisfy the industrial parties and because they are simple. This may have the effect of considerably under-representing the complexity of the occupation and under-mining the board's own objectives of producing competent workers and a competitive economy.

Evidence from Germany—a country which has had occupational standards for decades, suggests that it is of great importance to go beyond traditional occupational analysis in determining competencies and to include general intellectual capacities, and attitudes as well as team work and communication skills in any competency framework.

Advantages

Yet if these warnings are heeded and a broad conceptualisation of competency such as that outlined above is adopted, there are many potential advantages to be gained from adopting a competency framework for education and training.

- A CBS system is seen to be the best way of implementing the ideas behind workplace reform and award restructuring. It potentially enables competence achieved in any way to be recognised; i.e. not only that gained through formal qualifications. This allows maximum use of the skills present in the community, enabling people to undertake work at an appropriate level, not one determined by formal awards alone.
- A CBS system established by the industry advisory committees (and the professions) will give clear guidelines to all who provide training and should ensure greater relevance of vocational education to industry's needs.
- CBS can help to maintain public confidence in all occupations from trade level to professional level; i.e. entry to an occupation is seen to be based on clear public standards.
- International developments such as the UNESCO convention on recognition of studies, the closer economic relationship with New Zealand, and the GATT negotiations, while most relevant to the professions and paraprofessions, do have implications for all occupational levels as foreigners increasingly seek to work in Australia. CBS provide a sound basis to begin negotiations for reciprocal agreements.
- By focussing on competence regardless of how it may have been developed, competency-based standards will help certain groups whose skills may not at present receive due recognition. Some overseas qualified workers believe that Australia's current entry procedures rely too much on testing for knowledge. They may be right or they may be wrong. A move to competency-based testing would make for a more objective testing procedure.

These issues are of particular importance during times of labour shortage. Shortages in a number of professions and trades have occurred during the 1980s. These labour market shortages have occurred through a range of professions, including accounting specialisations, electrical and electronic engineers, and some of the health professions, as well as many trades and middle–level occupation. Some of these shortages could have been lessened with a competency-based system to facilitate recognition of skills.

Competency-based education and training

The aim of introducing competency-based standards is, amongst other things, to guide the providers of vocational education and training. As the NTB's paper puts it: 'to achieve an effective, responsive and coherent national vocational education and training system'.

Yet more than two years after the premiers' conference which agreed to the implementation of competency-based training, there is still lack of clarity about the nature of CBT let alone how it may be implemented. As a recent policy paper produced within NSW TAFE asked: 'What is CBT? What are its underlying principles and aims? What are the pitfalls? What are the educational implications, advantages/disadvantages? Where are we in terms of reaching consensus?' (TAFE policy unit 1991).

What is CBT?

A widely accepted *definition* of CBT does not currently exist. The best that can be done is to classify courses, using accepted criteria, according to the *degree* to which they are competency based. Thus, depending on the number of criteria incorporated in an individual course, it can be classified as low, medium or high.

The seven criteria listed below were developed by COSTAC and have been used in a recent study of the extent of CBT in TAFE throughout Australia (Thomson 1990). Thus, they have been widely circulated and accepted amongst vocational educators. These criteria are:

1. A full list of competencies in the TAFE component (of the course) has been documented with specific standards and conditions for each competency.
2. Students can be assessed for their competency at any time they believe they are ready.
3. Training is provided in a modular format which relates to specific competencies.
4. Assessment is based on the standards specified in the competency statements.

5 Assessment is for the most part based on actual demonstration of skills.

6 Students can obtain exemption from part of the training and move to the next unit of work on the basis of demonstrating competence.

7 Students results are recorded in terms of a statement of competencies.

The minimum number of criteria which would lead to a classification of low CBT would be numbers 1, 4 and 5 above. That is, a set of competency standards have been established, the assessment is based on these standards and is for the most part (though not necessarily exclusively) a direct assessment of performance.

In order to qualify as medium CBT, the additional criterion is number 3 above. That is, the curriculum is modularised. This is a significant departure from the previous classification as it enables a student to undertake part of a course rather than all of the course (though when this could be done could be determined by the teacher/trainer). The students can be assessed on the module and, if successful, attempt other modules when they are offered. A high degree of CBT would incorporate, additionally, criteria 2 and 6. This level is a considerable advance on the medium level, since it incorporates the element of self-pacing.

> *What is vital to note is that the actual competencies are not themselves the curriculum. It would be an absolute disaster if each competency standard were simply taken and translated into a learning outcome with its associated assessment strategy.*

In the case of, say, accounting, the standards would be examined and then curricula written which might develop the competencies in a number of ways using a number of strategies. There might be a problem–based curriculum for example which sought to integrate various 'disciplines'. There might be case studies which were partly self paced and which aimed to develop a number of competencies in combination. There would still be areas of knowledge which needed to be taught as a basis for competencies which might be developed later.

While the typology outlined above provides a model of what CBT might be, there is little evidence about what is actually happening in Australia. The only available data is that only 13% of all courses are currently competency based using the *low* degree of CBT as the benchmark (Thompson 1990). This points to the fact that the process of implementation of CBT has hardly begun. Little research has been undertaken into the disadvantages and advantages of the various degrees of CBT and how these might vary depending on the nature of the occupation. Chapter five examines evidence on self-pacing and provides a review of benefits and dangers of this approach which is a key feature of 'high degree' CBT.

Finn and Mayer committees—key employment competencies

The Finn Report (1991) and its extension the Mayer Committee Discussion Paper (1992) add an interesting new dimension to the debate about CBT in Australia. Finn proposes a strategy by which all young people up to the age of nineteen years will take part in an integrated combination of schooling and/or TAFE and/or higher education and/or on-the-job training. The particular combination of ingredients in each case would be chosen to suit the individual's interests and aptitudes. It is proposed that the integration of the combinations of ingredients will be achieved by a series of key generic competencies that will underlie all curricula whether they be school, TAFE, higher education or on-the-job training curricula. Finn recommends that progressively higher levels of performance in each of the key generic competencies should be a major outcome of all young people's education whatever particular pathway they might choose. Appropriate measures should be applied to demonstrate the attainment of the required levels of competence.

The key generic competencies proposed by the Finn Report are language and communication; mathematics; scientific and technological understanding; cultural understanding; problem solving; and personal and interpersonal skills. The Mayer Committee, which is working on the implementation of the Finn Report, has proposed three additional key generic competencies: creativity (including the Arts); family and household management; and information technology.

Implementation of the Finn/Mayer reports would pose many challenges including:

- Identifying the key competencies.
- Specifying the stages of sequential development of key competencies.
- Specifying performance criteria to measure attainment of each stage.
- Educating teachers and trainers to be able to teach the key competencies.
- Rewriting curricula to incorporate the key competencies.
- Ensuring students can transfer these competencies to new situations.
- Ensuring national consistency in teaching and assessment

of the competencies.

- Developing links between the generic key competencies and the competency standards for particular occupations.

Those involved in vocational education and training should keep abreast of developments in this area as they will undoubtedly have significant implications for their work in the future.

Assessment

Perhaps the most difficult area of CBT to implement will be the assessment of competency-based education and training. These issues are dealt with in detail in section three of this book. It is sufficient to say here that if the conceptualisation of competence which has been advanced in this chapter is accepted, then the widely held assumptions about the objective nature of most assessment of competencies is misplaced. While it is desirable that it should be as objective as possible, the fact is that the more complex and holistic the competencies and standards established, the more professional judgment needs to be used in assessing them. Thus the training of assessors may be a major issue over the next few years as the CBS framework and CBT are put in place.

Conclusion

This chapter has highlighted how policy developments in the wider political and economic context are impacting as never before on vocational education and training. Reflecting similar developments overseas, fundamental changes in the Australian economy and its labour market depend crucially for their success on vocational education and training. Hence vocational teachers/trainers are presented by these developments with a series of challenges.

Award restructuring, with its focus on multiskilling, will require that much vocational education/training will take place in hitherto unfamiliar ways. There will be much more emphasis on delivery of short courses in a variety of ways in a variety of settings. Some of this will be delivered by TAFE, some by in-house trainers, and some by private providers. In all this diversity, there will also be an emphasis on articulation since career paths will be linked to levels of skill.

Changes in the funding of training, such as the Training Guarantee Scheme, are designed to facilitate these developments. Clearly, such vast changes will need some effective quality control mechanism if they are to succeed. This is where the National Training Board and the system of competency-based standards comes in. As this chapter has indicated, competency-based standards offer many benefits, provided they are established and assessed properly. The possibilities of competency-based education and training offer further challenges and opportunities for vocational teachers/trainers.

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Chapter 3

Challenges facing vocational teachers and trainers in the 1990s

Geoff Scott

Scott argues that if vocational education and training are to meet policy makers' and industry's expectations then trainers and vocational educators will need a wide variety of new skills in teaching/learning and evaluation. To develop these, he believes that teachers and trainers will need to face three challenges.

The first is to examine, clarify and learn to cope with the complexity and unpredictability of their everyday life in vocational education. The second challenge is for individuals to be aware of the value judgements which guide their practice and their evaluation of it. The third challenge is to develop a framework for understanding what a competent vocational educator and trainer might be. These challenges are a prerequisite to successfully developing or using new learning strategies.

The way to meet these challenges is to adopt a reflective approach to professional development: talking to colleagues, observing respected colleagues at work, adopting an evaluation framework which actually checks the impact of a program, examining one's own feelings and attempting to bring to the surface hidden assumptions about teaching and learning, being willing to experiment. In addition Scott points out that individuals' actions must be supported by those of policy makers and managers who need to create a workplace culture and climate which encourages experimentation, continuous professional learning and tolerates diversity and ambiguity.

Introduction

> *How I have made my classes and on-the-job teaching a success has always been a mystery to me—I used to consider that, somehow, I just 'muddled through'. I knew that no two sessions were ever exactly alike: many went off in quite different directions (though the requisite points were covered). And from talking with my students after class, I had decided that it wasn't just good luck. I must be doing something right. Now that I've got an overview and compared my experiences with other vocational educators I know what it was. This has helped me gain confidence and develop my skills as a trainer much more quickly.* (Teacher of photography)

As earlier chapters emphasise, governments, employers and unions currently have great expectations of Adult Vocational Education (AVE) and industry training. In particular, they now expect these forms of post-compulsory education to play a central role in improving productivity and ensuring that present initiatives in workplace reorganisation and the implementation of new industrial awards are successful.

If they are effectively to fulfil these expectations, adult vocational educators will have to become adept at skilfully and appropriately using a much wider range of teaching, learning and assessment strategies than ever before. There will still be situations where more established group teaching and learning strategies like the lectures, the practical demonstration and the supervision of set practical work will be appropriate. However, there will also be occasions when less familiar approaches will be more appropriate. These would include the design and use of: self directed and self-paced learning projects, various forms of distance education and open learning, on–the–job learning, mentoring and coaching, games and simulations, procedures for teaching critical thinking, and methods for assessing competence and prior learning.

The nature of this more extensive repertoire of performance skills is what the rest of the book discusses in detail. However, before moving onto this discussion, it is important to come to grips with three more overarching and fundamental challenges facing adult vocational educators in the 1990s. If these three challenges cannot be successfully met, then, even if all of our vocational educators in Australia develop the skills discussed in the rest of the book, I would argue that AVE will still have limited success in achieving the expectations now being made of it.

The first challenge

The first challenge is for adult vocational educators to learn how to cope with the increasing complexity, unpredictablility and variability which now characterises their daily work.

This requires them to develop a clear and comprehensive understanding of what the process of vocational teaching and learning entails. It requires them to be clear on the many things which may have to be taken into account in order to develop programs which are effective. It requires them to develop a capacity to tolerate the ambiguity, complexity and constant demands for adaptability which arise as they encounter new groups of learners and new learning contexts. It requires them to become comfortable with adapting to changes in organisational policy and procedures and demands that will arise from the rapidly changing industrial, economic, technological and political context of the 1990s.

Coming to grips with this challenge will serve two important purposes:

Firstly, by identifying and naming all the elements that may influence what happens in AVE and by working out how they fit together, adult vocational educators will be better equipped to handle the complexity of the process. This is because they will, as the teacher of photography quoted above discovered, start to understand why some things work and others do not. People who can't see where a particular teaching or learning dilemma fits into an overall pattern are doomed to feel victims of mysterious forces they don't understand. They find it hard to sort out whether what happened was their responsibility or due to someone or some force beyond their control. Labelling what they may already unconsciously know helps them to handle their work with greater confidence.

Secondly, as they discover that all adult vocational educators experience uncertainty and frustrations, they will find themselves better able to cope when things don't go as expected or when yet another change is in the air. Simply put—they won't see their feelings of uncertainty and frustration as something abnormal.

The second challenge

The second challenge is to come to grips with what constitutes 'effective' AVE and training and to work out how best to establish that these criteria are being met.

Addressing this challenge will highlight a fundamental problem in AVE: the fact that different people are highly likely to hold contradictory and possibly limited assumptions about what constitutes 'effective' AVE. It also involves establishing what constitutes a feasible but valid and reliable approach to the evaluation of adult teaching and learning in AVE.

Addressing this challenge is important for a number of reasons. It will encourage everyone who plays a role in the process (employers, government, unions, accrediting agencies, teachers and educational administrators) to surface, compare, justify and critique the indicators they use to make judgements about the effectiveness and outcomes of our training effort. This is not being done consistently, despite a massive increase in invest-ment in AVE and industry training in recent years.

If key players don't have an agreed set of indicators for use when making judgements about the 'success' or 'effectiveness' of a given learning program, the people responsible for implementing it will have no way of testing that they are on-track. Consequently the whole process of teaching and learning will lack focus and accountability.

The third challenge

The third challenge is to develop a much clearer and more comprehensive picture of what constitutes competence in an adult vocational educator and how its development might best be supported.

Here the focus shifts to the individual teacher/trainer—the person who is the vital link between the expanded expectations for AVE in the Australia of the 1990s—and ensuring that something appropriate gets effectively put in practice.

If we can establish a clear and comprehensive profile of what distinguishes effective adult vocational educators from less successful ones then we will be equipped to monitor, support and give focus to the career–long professional learning necessary to meet these expanded expectations.

Concentrating on the third challenge will help identify the attitudes (stance) and ways of thinking that best equip teachers/trainers to cope with and negotiate successfully the complex, changing and ambiguous reality of their life in AVE. Doing this will highlight the importance of teachers/trainers not only being able to deliver competently the wide variety of teaching, learning and assessment tactics discussed in this book, but also the importance of their being able to work out when (and when not) to use such strategies.

It is these three challenges which this chapter addresses.

In general, I aim to propose, outline and discuss a comprehensive framework for understanding the overall process of adult vocational teaching and learning, the process of evaluation and assessment in AVE and the role of professional competence. This will help give a context within which the specific strategies discussed in the rest of the book can be meaningfully located.

In particular, I will emphasise that the possession of specific teaching, learning and evaluation strategies comprises only one aspect of the competence that adult vocational educators will need to handle effectively the expectations now being made of AVE. I will argue that what is equally important is the possession of those 'higher order' skills which will equip these people to know when (and when not) to use, update and expand these skills.

Challenge 1: Understanding and coping with the complexity and uncertainty of daily life in AVE

One of the most useful ways to develop an overall picture of what day–to–day life as an adult vocational educator or trainer is like is to invent an analogy. Consider the analogies below. Which one seems to match your experience? Why?

Many people, if they are very new to teaching, may pick a metaphor like 'white–water rafting' because it seems to capture the speed and uncertainty of a day–to–day experience where simply having a lesson plan (a map for an unfamiliar river) is never quite enough to get them through. After they have been working with adult learners for a while, they tend to prefer a

Table 1

In my day-to-day work as a teacher/trainer
I feel like I am a:
GUIDE
COACH
WHITE WATER RAFTER
GARDENER
MOTHER HEN
MAGICIAN
JUGGLER BALANCING SPINNING PLATES
PERSON GOING UP A DOWN ESCALATOR
POTTER
FELLOW TRAVELLER
PERSON NEGOTIATING A SWAMP
SKIPPER ON AN OCEAN VOYAGE
DOCTOR

metaphor with slightly less urgency—like negotiating a swamp. Some metaphors suggest a greater feeling of control than others and each suggests a slightly different view of what AVE is all about and the role of the teacher/trainer.

The swamp analogy is worth looking at in more detail. It is a useful analogy because it identifies both the dynamics and the many elements which make up the overall process. Adult vocational educators who use it describe the dynamics of their work as follows. They say that, typically, it :

- *is constantly changing and shifting*. They say that even if they enter the same basic teaching situation again and again, things will never be quite the same as the previous time they entered. Something is always different.
- *is uncertain and somewhat unpredictable*. They say that there is always going to be the unexpected twist or surprise.
- is excessively *value-laden and subjective*. What one person sees as happening is not necessarily how others see the same situation. Misinterpretations and different reactions are common.
- is a *mixture of individual action* (acting on things which they can influence) and *drift* (trying to cope with factors beyond their control).
- requires an ability to *'read'* (or interpret) the significance of a constantly changing and extremely complex combination of influences, people and factors *and to respond* appropriately in the light of this 'reading'.
- involves not just having an initial map or plan of action to give the exercise focus but also having the ability to *modify the map* in the light of the unexpected events that occur when actually trying to put it into practice.

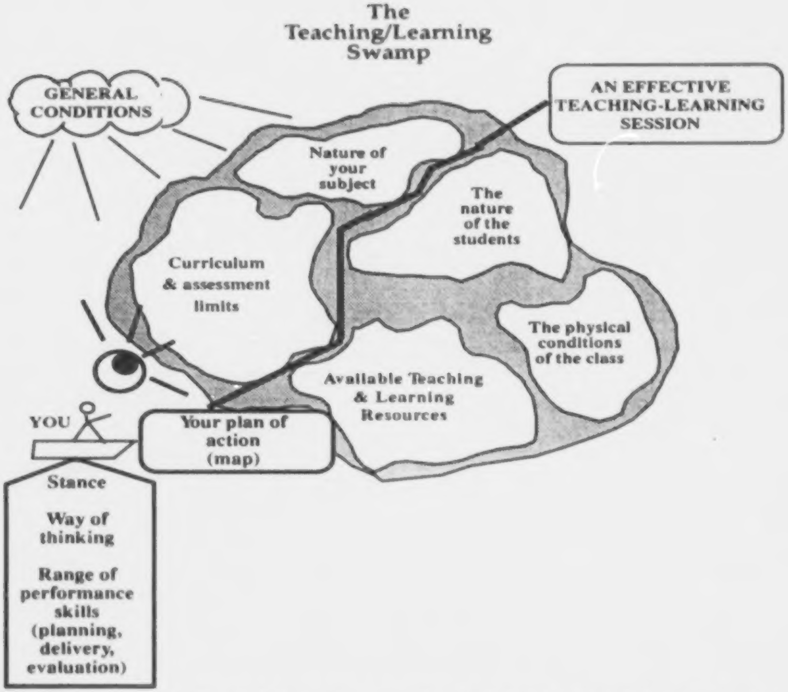

The Teaching/Learning Swamp
GENERAL CONDITIONS
AN EFFECTIVE TEACHING-LEARNING SESSION
Nature of your subject
The nature of the students
Curriculum & assessment limits
The physical conditions of the class
Available Teaching & Learning Resources
YOU
Your plan of action (map)
Stance
Way of thinking
Range of performance skills (planning, delivery, evaluation)

Figure 1

In figure 1 there are a number of 'islands'. Conditions on each of these have to be 'read' and accounted for by adult vocational educators if they are to produce consistently appropriate and effective learning sessions. These 'islands' include:

- Changing company, award, curriculum and assessment requirements
- Relevant subject content
- The particular backgrounds, abilities, needs and experience of each new group of students/trainees
- The advantages and disadvantages of the location where learning is to occur
- Available teaching and learning resources

Exactly how can each of the islands in the teaching and learning swamp vary? Having a detailed knowledge of what is involved in each island helps ensure that the adult vocational educator doesn't miss a vital ingredient in making a session a success.

The physical conditions of teaching can vary in many ways. For example:

- whether learning occurs on the job or off the job, in large groups, small groups or 1:1;
- the size and location of the learning space;
- the appropriateness of the learning space to the subject at hand;
- room layout, 'feel' and quality;
- lighting, sound levels, temperature;
- quality and quantity of furniture;
- quality and quantity of audio visual and other learning equipment;
- how easy it is to get to the learning location (think, for example, of the geographically isolated, classes held in remote community locations late at night, the challenges faced by the physically disabled etc.)

Students/trainees can vary in terms of their:

- Background (e.g. their cultural background, where they have lived, the sorts of values and expectations they carry with them, the sorts of learning expectations they have, the sorts of outside responsibilities they have, their age, physical dexterity, gender and so on);
- Abilities (e.g. their way of thinking, physical abilities, specific mental skills, how they learn best[1]);
- Needs (e.g. some come to learn for social reasons, some for career progression or to stimulate their mind, others to prove something to themselves, or to build their confidence. Others get involved because of practical life or basic survival needs. They may have different emotional needs and attitudes towards the teacher and fellow learners);
- Experience (e.g. the length, nature and quality of their schooling, the amount of prior contact they have had with the subject to be studied)

This enormous and complex variation in AVE students/ trainees explains why trying to ensure that what is provided is relevant to every person in a group is the BANE of the vocational educator's existence.

The subject taught can vary in terms of:

- whether it is mainly practical or theoretical (hands on or knowledge based);
- whether or not it is directly applicable in the world beyond the classroom (think, for example, of the difference between a car maintenance course and a class on fourteenth-century shipbuilding);
- whether or not it lends itself to a wide variety of teaching-

learning approaches (think, for example, of how much easier it would be to put variety into a learning program on stained glass compared to one on differential calculus);

- whether or not its content is up-to-date and relevant to the changing needs of students/trainees beyond the class.

The curriculum, resource and assessment limits under which the vocational educator must operate vary in terms of:

- whether or not the course is accredited (if it is, teachers/trainers may have a set syllabus and, possibly, some form of external assessment which will limit how flexible and responsive they can be in what and how they teach);
- whether or not the course is being done under contract for an employer or other client (if so, these people are likely to require that certain skills and knowledge be taught; if not, trainers can be more responsive to student/trainee needs);
- the amount of money and resources the organisation and funding bodies have made available;
- the number of students the teacher/trainer must cater for in each session;
- whether or not students/trainees are forced to attend our learning program or if attendance is voluntary;
- whether or not it is a requirement that learning occurs in formal group learning situations or other less formal environments. This would include whether it has to occur off the job or on the job;
- whether or not the adult vocational educator(s) delivering the program are responsible to some steering committee or governing body.

Available *learning equipment and resources* can vary in terms of:

- whether or not, in the case of more formal learning situations, the teacher/trainer has available a wide range of learning equipment (e.g. electronic whiteboards, overhead projectors, slide projectors, screens, film projectors, audio players, video tape players/recorders and monitors etc);
- whether or not, in the case of less formal learning situations, the teacher/trainer has available a variety of equipment which can facilitate individual or small group learning (e.g. video players, radio, teleconferencing facilities, access to networked computers, on-the-job learning facilities and so on);
- whether or not the teacher/trainer has available, can develop and can use a wide variety of appropriate teaching and learning resources (e.g. self-paced learning manuals, models, simulators, handouts and job sheets,

overhead projection transparencies, slides, video tapes, films, charts, learning laboratories, practical skills workshops, on-the-job resources etc).

Not only must the teachers/trainers keep an eye on all of the islands in the teaching/learning swamp. They also have to keep an eye on changes in *external conditions*. Changes there can also have important implications for what is done in the classroom. For example:

- Governments change and when this happens we are likely to see some movement in priorities concerning AVE subject matter, in how learning should be supported, in who should be involved, in where learning should occur and in funding priorities.
- Changes in technology and in the economy can influence what and how adult vocational educators teach.
- The attitudes and expectations of students/trainees can change as social values/attitudes change.
- The structure and priorities of the organisations in which adult vocational educators work can change (e.g. in the 1990s it is highly likely that training will be more closely linked to competitive strategy than ever before. Because of this it will be important for teachers and trainers to understand the role of training in improvement of productivity and market competition).
- Employers and executives can change. When this happens we may see a significant shift in the climate and priorities of the workplace. This, in turn, can influence the vocational educator's effectiveness in organising and delivering learning programs.

How do effective adult vocational educators negotiate such a complex and changeable context? People who use the swamp analogy describe what needs to be done as follows:

When *designing a session*, teachers/trainers need to have relevant and up to date information about each 'island' in order to develop a desirable, feasible and relevant plan of action. If they don't, they may produce a plan of action (a session chart) which will not match what is needed at that point in time. This will make it difficult to negotiate the swamp successfully and reach the required destination—an effective teaching and learning session (or sequence of sessions).

There is also the need to look beyond the swamp, to be up to date on general 'weather conditions' which may imply a change of plan.

Because general conditions and every island in the swamp are prone to constant change, it is impossible to expect that prepackaged, rigidly standardised plans (courses of action) will automatically remain relevant or achieve success. Even when repeating the same session with similar groups some adjustment in one's plan will always be necessary. This way of thinking involves skill in 'reading (what might work best) before action'.

Of course, once teachers/trainers enter the swamp and start to *put their plan into action* they may find that they have 'misread' what was needed. Also they may be confronted with quite unexpected changes in one or more of the 'islands' and be faced with navigation dilemmas. What was an easy way through the swamp last time they entered it may now be blocked. Swamps are complex, ever–changing systems. Some aspects will be the same as last time, others will have changed. This means that vocational educators will have to be good at 'reflecting in action'. The more times they enter the same sort of swamp (i.e. the same sort teaching and learning situation) the better educators get at sensing what is likely to work, the better they become at 'reading and matching' and 'reflecting in action' in similar situations.

Consequently, as can be seen in figure 1, a crucial element in ensuring that each teaching/learning session is 'effective' is *the competence of the individual teacher/trainer*—the individual's attitudes, ability to come up with appropriate ways of handling unique situations and dilemmas as well as the quality of the individual's up front teaching, learning, evaluation and assessment skills are all important ingredients.

How to describe and develop the elements of competence necessary to equip the teacher/trainer to negotiate the AVE swamp effectively and consistently in the ways suggested above will be taken up in specific detail when challenge three is addressed.

But first it is necessary to address challenge 2: how best to establish and measure that the whole exercise has been 'effective'.

Challenge 2: Developing a clearer and more comprehensive understanding of the role of evaluation in AVE

What is 'effective' adult vocational education?

Despite a dramatic increase in the number and variety of training programs and providers in recent years, the sorts of indicators being used to judge that AVE programs are 'effective' often remain unclear or contradictory. It seems, in many cases, that there is no agreed target at which to aim.

This situation is made more difficult by the tendency for individuals only to see things from their own perspectives. These perspectives on what constitutes effective AVE seem to vary considerably.

A quick way to demonstrate how quite different assumptions about what constitutes effective adult vocational education can result in quite different indicators of effective practice is to consider how five dissimilar 'tribes' of adult educators view the whole enterprise. The distinctions made between these 'tribes' are not meant to be scientifically accurate. Nor is it suggested that individuals belong exclusively to one tribe. Rather, the point being made is that values and assumptions are critical to understanding how AVE works.

Table 2 suggests that an individual's assumptions about what constitutes a desirable focus for adult education will help determine:

- what subject matter that person emphasises;
- what style of teacher-student relationship s/he prefers;
- which teaching and learning approaches s/he is most attracted to, and so on.

These differences are highlighted in the contrasting teaching and learning metaphors preferred by different 'tribes'.

When people are asked what indicators they use to judge whether an AVE program is effective what they say is always going to be coloured by their 'tribal preference or bias'.

Some will look at indicators concerning organisational effectiveness and productivity, others to how liberated the individual student becomes. Some will check that 'worthwhile' knowledge is being imparted, others will focus on checking that practical skills can be demonstrated. Some will check if the teacher is in control, others will seek to establish if the teacher-learner relationship is more collaborative. Some will seek obedient students, some happy collaborative ones. Others may prefer their students to be critical of what is going on. These indicators will guide how they behave towards their students/trainees, what they emphasise as important and so on. Their actions reveal their preferences.

The indicators preferred by different individuals may also be coloured by their role in the AVE program. This, in turn, is influenced by management's criteria for effective performance of their particular job. For example:

Administrators/industry managers might look to how much positive publicity a learning program gets or whether senior people in other companies or educational organisations have heard of it and think it is worthwhile. They might look at its efficiency (for example the number of people enrolled, retention rates and how much the program is costing) or for hard evidence that it is has improved productivity.

Teachers/trainers might focus more on how the students/ trainees are reacting. They may look to the quality of their work or whether they turn up early and leave late as indicators of effectiveness.

Students/trainees might conclude that the learning program is effective if they get a job or a promotion or if they feel that the teacher is taking account of their background, abilities, needs and experience. They might be critical if the time, place, content, teaching approaches, assessment techniques or teacher's general attitude are inappropriate.

It is vitally important that educators, administrators, employers, unions and other players recognise the existence of this wide diversity of indicators and specifically seek to establish some agreement between them. A specific version of this problem is currently being seen in the various ways in which people are defining and measuring workers' competence (see Scott, 1991).

Without this clarity and agreement there will be no way of judging whether use of the wide variety of teaching and learning strategies discussed in the rest of the book, has been 'effective'.

What is an effective approach to the evaluation of teaching and learning in AVE and training?

If it is important to develop greater understanding of what indicators will be used to judge that an AVE program is effective, it is equally important to come to grips with how these might best be tested.

This requires vocational educators to be clear on the definition of and relationship between terms like *evaluation* and *assessment*, to establish what sorts of strategies are best used for different evaluation and assessment purposes and to be aware of the advantages and disadvantages of different sorts of evaluation procedures.

'Evaluation' vs 'assessment'

Although the words evaluation and assessment are used frequently, people often do not check that their definition of each term matches that of their colleagues.

One useful way to distinguish between the two terms is as follows:

> Whereas *evaluation* is the process by which we make judgements about the worth, effectiveness or efficiency of a particular program, activity, teaching session, resource or learning encounter, *assessment* is just one of the techniques used to gather data to help us make such judgements.

The nature of evaluation

It is most important to be clear on what the process of evaluation involves. At the heart of the term *evaluation* is the word 'value'. Making judgements of worth (attributing value) is ultimately a question, therefore, of the application of subjective perceptions of what is 'good' and 'bad'. As noted earlier, the somewhat different criteria for effective AVE held by the five tribes in adult education results in considerable variation in what is judged to be a valuable teaching and learning experience.

One has to be aware, therefore, that part of the problem of trying to deal with different needs and expectations is that, in any teaching program, different teachers and students may (often quite unconsciously) be seeing things from different tribal standpoints. Such standpoints have been acquired over a lifetime and are not easily changed.

Evaluation is the driving force behind the whole process of teaching and learning. For example administrators and industry managers allocate funds to one training program or provider not another, they prefer one learning approach to another, they give priority to one lot of trainees over another, and they emphasise one cluster of content not another. They continuously make judgements about the worth of particular programs and the relative competence of different trainers.

Teachers/trainers evaluate what is likely to work when preparing for a teaching-learning session. They make judgements about how well things are going once they start teaching. They evaluate how successful the session has been after it is over.

It is most important to recognise that this sort of evaluation is going on all the time and that much of the most significant evaluation is informal not formal.

It is also important to recognise that evaluation is not something abstract. Evaluation is directly connected to action, to what people do. Once an adult vocational educator concludes that such and such a technique isn't working or that a particular student/trainee is a 'problem' this 'reading' of the situation directly influences what the trainer decides to do next. Once a trainee or an employer develops an impression that an individual is a 'good' or a 'bad' trainer they will carry this view forward into future encounters with that person. In this way evaluation at one point in time directly influences how people behave at another.

Evaluation is intimately tied up, therefore, with the process of 'reading and matching' which will be discussed when challenge three is addressed.

This broader conception of evaluation more accurately fits the daily reality of life in AVE suggested in the swamp analogy

TABLE 2
THE 'TRIBES' OF ADULT EDUCATION

TRIBE	AIM	FOCUS	CONTENT	RELATIONSHIP WITH STUDENTS/ TRAINEES	METHODS/TEACHING LEARNING METAPHOR
Traditionalists	Discipline of the mind. Pass on traditionally 'worthwhile' knowledge skills and attitudes.	The Individual	'Classics'—perennially valuable knowledge	Teacher superior to student/trainee	Metaphors: empty vessels transfer; conduit; doctor-patient; Methods: lecture
Self-Actualisers	Full personal happiness. 'Self actualtisation'	The Individual	Feelings, personal experience. Hidden assumptions to be surfaces and critiqued	Teacher inferior to student/trainee (?)	Metaphors: social director; coach(?); gardener. Methods: reflective lng techniques, T-groups; facilitation techs.
Progressives	Growth of all individuals (especially disadvantaged) to benefit society - reorder 'the queue' of unemployed	Individual in a social context	Immediate problems and life needs of the student, especially survival problems	Teacher and student/trainee equals	Metaphor: coach Methods: problem solving techs
Guerillas	Creation of a new and better social order	Individual in a struggle to transform societal structures and priorities	Sources of oppression	Teacher and student/trainee equals	Metaphor: guide, leader, joint venturer; guerilla; shaper(?) Methods: praxis; dialogue
Organisational Maintainers	Better organisational effectiveness through successful training of members in skills, knowledge & attitudes required by the organisation	Organisation's needs	Determined by organisational needs assessment and broken down into specific behavioural objectives	Teacher superior to student/trainee	Metaphor: manufacturer; shaper; builder; total quality control Method: training using any technique that's cost-effective

References: Darkenwald & Merriam (1982: 35-69) Hunt (1987: 78-81) outlined when challenge one was discussed. It is more helpful than the view which simply equates evaluation with a formal test, an assessment task or a 'happy sheet' given out at the end of a course or session.

Gathering evaluation data

So, in order to tackle challenge two effectively, there is a need to develop a clearer understanding of the indicators of program effectiveness to be used in AVE and the nature of evaluation. There is, however, another equally important task to be undertaken. This involves sorting out how best to gather AVE evaluation data. This task is important because of the tendency for people to use scant data when drawing conclusions about the worth of a particular individual or program.

A good way to obtain a comprehensive overview of the possible methods for collecting evaluation data is to see evaluation as taking place at *four levels.* The levels run from least important to most important.

At level 1 the paperwork is checked

For example: evaluators can look at the AVE program or session outline and check a number of things; how worthwhile the topic looks, if it seems that it will be delivered in an appropriate and interesting way, if the location for learning (e.g. on the job or off the job) is fitting, if there is a suitable variety of learning strategies, if these ensure the active involvement of students/trainees, if the learning resources are appropriate and imaginative, if attention is given to appropriate feedback on learning, if the session appears to flow logically, if the learning objectives are clearly expressed, if outside requirements are being met and so on.

It is also possible to look at written reports which summarise how successful the session or program has been. These could be summaries of student surveys, written reports from the teacher or from work supervisors and so on.

At level 2 the extent to which required people and resources are in place is checked

For example: evaluators can check that an appropriate learning space (on or off the job) has been made available, that it suits the purpose at hand, that a teacher is turning up for each session, that attendance and retention rates are satisfactory, that required learning resources are in place and so on.

Such things are fundamentally concerned with the efficiency of the program rather than its effectiveness.

At level 3 the quality of the learning program's delivery is checked

For example: evaluators can go into the classroom or workplace to observe the teacher and learners in action or gather data using survey instruments or interviews. At level three they look at what people are doing rather than simply checking that they are present. They check to see how well the paperwork studied at level one is being put into practice. They ask students/trainees if they feel the teaching or learning program is being well delivered.

This level is concerned with the effectiveness of inputs rather than the program's efficiency. The focus, therefore, is on the quality of implementation. Judgements made at this level are often concerned with formative evaluation, that is, with trying to make the planned program work as well as possible in practice.

At level four the nature and quality of the program's impact on those associated with it is checked

For example: evaluators check to see if a program which looked successful at levels one–three has actually led to a 'positive change' in participant's skills, knowledge, attitudes and way of thinking. To do this they can use a variety of assessment techniques (see Field 1990) and can seek to establish if the program's impact has been favourable. They can check this, not just with students or trainees, but with the teachers, administrators, employers, government officials and other interested parties. They can also attempt to establish if the impact on productivity has been favourable.

Level four is the most important level of evaluation because the ultimate purpose of the whole AVE exercise is to ensure that the outcomes of the entire enterprise are favourable. It is especially important that trainees not only learn something favourable but that they translate this learning into changed practices in the workplace in order to improve productivity and innovation. How this aspect of assessment can be reliably, feasibly and validly undertaken is a major problem still to be resolved. Judgements using data gathered at level four, therefore, are concerned not with formative but summative evaluation. That is, assessment data is used to sum up the worth of the whole exercise by looking at its impact. Here effectiveness is judged by looking at the quality of outcomes, not, as we saw in level three, by looking at the quality of inputs. For many, this is the acid test of effectiveness.

The idea of seeing evaluation as occurring at the four levels suggested above should help adult vocational educators to take a more comprehensive approach to evaluation planning. Table 3 illustrates how this might be used when planning to evaluate a workplace basic education program.

The framework suggested in table 3 shows how different evaluation criteria can be tested using different sources of evidence and data gathering methods at different phases of the teaching and learning process. It allows for the use of informal (i) as well as formal (f) data-gathering methods and also ensures that it is clear who is responsible for each evaluation task and when this task should be completed (see McDonald

Table 3

Workplace Basic Education Program
Evaluation Plan

PHASE	EVALUATION CRITERIA	SOURCE OF EVIDENCE	METHOD TO GATHER DATA	PERSON(S) RESPONSIBLE	RESULTS DUE
Upfront (before it starts)	Is the prog seen as desirable?	Staff, CEOs,Unions, Gov	Interview (i/f), survey	Program coordinator	15th Feb
	Which aspects are distinctive?	Teachers/students	Interview (i/f)	Prog coord/staff devel	15th Feb
	Is the program feasible?	CEOs, staff, studs, doc's	Interview (i/f), document analysis	Workplace Trng Team	28th Feb
	Is there a shared vision of what'll happen?	Staff	Structured grp discussion	Prog coord/Workplace Training Team	28th Feb
	Level 1: Is the paperwork clear, logical, coherent, theoretically sound?	Staff, students, CEO, relevant external bodies, Educational "experts"	Interview (i/f), survey	Workplace Training Team (WTT)	28th Feb
During Implementation (Once it's underway)	*Level 2*: Are human and material resources in place? General cost (efficiency) of program OK? Are enrolment numbers remaining OK?	Staff/Resource Section Invoices	Interview (i) Document analysis	Prog coord/WTT Resource Manager	Ongoing Ongoing
	Level 3: How effective is program structure, content, delivery, staff, assessment methods, timing, lng. resources, location?	Staff, students	Observation Interview (i/f) and Course questionnaire	Program Coordinator Program Coordinator Course Lecturer	Ongoing Ongoing End of course
	Level 4: Is there a 'positive' impact on / change in:				
	(a) Students' performance skills, way of thinking,stance, career, loyalty to the company, ability to self direct their learning?	Students/employers	Self report, q're,formal & informal assessment (on and off the job)	Program coord/WTT	Ongoing
	(b) Staff performance skills and career?	Staff/students	Observation, self report & q're, staff records	Program coord/WTT	Ongoing

Table 3

Workplace Basic Education Program
Evaluation Plan (cont.)

CRITERIA	EVALUATION EVIDENCE	SOURCE OF GATHER DATA	METHOD TO RESPONSIBLE	PERSON(S) DUE	RESULTS PHASE
	(c) Company's/ Trng. Agency's productivity, visibility, competitiveness,level of support for trng?	CEOs, P.R. people Accountants	Interview (i/f), analysis of accounts, media reports	Prog coord, CEO WTT	Ongoing
	(d) External bodies' support for the program/company, levels of promotion of training, accreditation?	Relevant Government, Industry, Union and Educational Bodies	Networking, interview, Analysis of policy documents	WTT, Prog Coord CEO	Ongoing
	(e) Extent of use of the wbe prog by other companies/groups?	Relevant companies/ groups	Survey, analysis of media reports, networking	WTT, Government coordinating agency	After pilot phase is over
Continuation (After it has been going for a while)	Does the program continue to be				
	(a) Part of normal company resourcing and staffing policies?	Relevant resource committee, reports	Interview (i), document analysis	WTT	Prior to end of pilot,then ongoing
	(b) Built into the relevant Industrial Awards?	Awards	Document analysis	WTT	Near end of pilot
	(c) Seen as relevant and desirable by key players or does it need adjustment?	Relevant government, industry & educational bodies	Networking, survey	Program coordinator	Ongoing
	(d) Actively praised by past students with potential students?	Potential students	Networking, survey	WTT	Ongoing
	(e) Staffed with competent people?	Staffing documents	Document analysis	WTT	Ongoing
Codes:			i = informal, f = formal	WTT = Workplace Training Team	

c. G. Scott

and Bishop 1990).

What is outlined in table 3 is so comprehensive that doing everything suggested would not always be feasible. However, by referring to it when discussing plans with others (especially employers and educational administrators), teachers/trainers will be able to emphasise what aspects they have chosen to focus upon and, most importantly, aspects they are intentionally leaving out.

In trying to put any evaluation plan into practice there is always going to be a number of key dilemmas.

These might include:

- Whether a norm-referenced system of assessment or a criterion referenced one should be chosen.
- The need to sort out whose indicators of success are to have most weight.
- Whether assessment should be continuous or only take place at the end of a course.
- How best to assess current competence.
- What to do with negative feedback about particular instructors or students.

Such dilemmas need to be resolved before the evaluation plan is implemented.

Probably the most common dilemma involves how to balance rigour (reliability) with relevance (validity) when attempting to assess a program's impact on its students/trainees.

Take, for example, an attempt to assess outcomes of an automotive trade course. Trainers may decide that they want to assess more than the trainees' ability to perform set, observable, routine tasks like changing a tyre. They may also want to assess those higher order competencies, like the ability to think critically or flexibly, which are now claimed to be characteristic of 'clever' workers. For instance, they may want to assess trainees' ability to antic ipate and to handle unexpected work dilemmas effectively or their ability to diagnose what is causing an unusual problem with an engine. They may also want to assess improvements in trainees' ability to get on collaboratively over time with work mates.

If they do elect to measure these things, adult vocational educators will find themselves confronted with the dilemma of how to balance rigour vs relevance. The routine task (tyre changing) can be measured rigorously (that is reliably and objectively) but the more relevant (valid) but complex higher–order thinking abilities and attitudes are very hard to measure in such a rigorous fashion. Assessing these will inevitably involve much greater levels of subjectivity.

The dilemma confronting teachers/trainers, then, is do they stick with the relatively trivial but easy-to-measure aspects of competence (like easily observed, routine performance tasks and the ability to reproduce set information) or do they move into the highly relevant but swampy territory of trying to assess attitudes and higher order abilities? This dilemma lies at the heart of the current debate about what constitutes 'worker competence', about how to measure it and what to do about 'current competency recognition'. These issues are taken up later in the book (section 3). The same problem exists when we try to define, develop and assess the competence of adult vocational educators themselves. It is to this challenge that we now turn.

Challenge 3: How best to define and develop competence as an adult vocational educator

What are the distinguishing attributes of the competent adult vocational educator?

Table 4 summarises a considerable amount of evidence gathered during the last decade (Scott 1990[a] 1991) about the attributes of a competent adult vocational educator.

Table 4

Competent teacher of adults

Stance

- Gives positive support doesn't put students or trainees down
- Is organised
- Treats students as equals —listens
- Perseveres
- Is enthusiastic and cares about teaching
- Has a sense of humour/perspective
- Enthusiastic about subject matter
- Can tolerate ambiguity, doesn't force own view if it clearly is not resonating with class
- Is willing to experiment and take sensible risks when organising teaching and learning
- Is willing to learn from errors
- Accepts change as inevitable
- Is action oriented

Way of thinking

- Prepares by accurately reading and matching (can effectively see a new situation as something similar but not identical to a previous one in order to work out how to respond effectively)
- Imaginative—can think on his/her feet as program is delivered and effectively reflect in action
- Is capable of thinking things through, of tracing out the consequences of different possibilities
- Can learn effectively from experience (reflects on experience using a framework)
- Can direct and monitor his/her own on-going professional learning
- Sees each situation as a unique but also potentially similar to previous ones
- Can accurately anticipate problem areas

Important performance skills & knowledge

- Can retrieve previous session plans easily
- Knows key aspects of student BANE & tchg context to be accounted for when planning
- Possesses a wide variety of teaching and learning techniques upon which to draw (field trips, SPL, prac. skills, lecture, small group work, 1:1, on the job, buzz, coaching, simulation & role play etc.)
- Knows subject matter thoroughly
- Can effectively store lesson plans and resources
- Can set up a warm and effective learning environment
- Can develop/use different types of learning resource (e.g. computer based resources self teaching resources, video, slides, tape, the OHP, white board, butchers' paper, modules etc.)
- Skilled in a variety of evaluation and assessment techniques - formative and summative, formal and informal. Skilled in giving feedback on teaching and learning (including praise and constructive criticism)
- Knows how to give a session balance and appropriate variety (tchg. in 'digestible chunks')
- Has effective communication and negotiation skills

What is summarised in this table gives us a comprehensive picture of the competencies the adult vocational educator's needs to negotiate the swampy daily reality of work in AVE outlined when challenge 1 was discussed. It is clear that performance skills like those discussed later in the book are an important component of competence. However it is also clear that it is important to possess higher order skills like stance and way of thinking. Possession of performance skills and professional knowledge without the ability to work out when and when not to use them constitutes technical proficiency not professional competence.

This conception of professional competence as consisting of four interlocked components (*stance, way of thinking, performance skills and professional knowledge*) finds considerable support in recent research and writing[1] .

The components of *stance* and *way of thinking* warrant more detailed discussion.

Stance

When people are set the task of identifying what distinguishes a really competent teacher from a less satisfactory one they almost always start by talking about the person's stance. That is, they usually start by discussing the *affective*, or emotional side, of the teachers or trainers they have encountered. They discuss how these individuals frame their relationship to life at work and to the people who populate it and, especially, their attitude towards their students/trainees.

The stance of adult vocational educators is a central factor in determining how effectively and consistently they negotiate the AVE teaching and learning swamp discussed in challenge 1.

As can be seen from table 4, if they find it difficult to tolerate ambiguity, if they always want things to go their way, if they are unwilling to acknowledge and learn from their errors, if they always want to win a point, if they find it difficult to treat adult students/trainees as equals and so on, then no matter how much they know, no matter how many teaching and learning strategies they have in their repertoire they will find it difficult to be consistently effective. Stance may be hard to measure but it is arguably at the core of teaching competence.

Way of thinking

The way of thinking which is characteristic of the competent adult vocational educator is equally important. Here the focus is on the cognitive attributes of effective teachers/trainers as distinct from their affective ones.

The teachers/trainers who rate best are described variously as having a 'creative intelligence', as being able to 'think on their feet', as people who anticipate problems and consistently come up with an accurate interpretation of what is the most sensible thing to do in each situation. Some people describe them as being 'reflective thinkers', 'good at detection' or as having an 'adaptable way of thinking'.

The teachers who rate worst are seen to be 'rigid' in their thinking, to have a *regurgitative* (as distinct from a *creative*) intelligence, to react always the same way irrespective of the situation, to misread motives, to be unable to see the consequences of their actions and so on. Given the swampy reality of work in AVE (challenge 1) and the diversity of indicators of effectiveness (challenge 2) which the teacher/trainer must now confront such a way of thinking is clearly inappropriate.

What does this 'creative', 'reflective', 'contingent' way of thinking involve? Recent work has started to give us more detailed insight into what happens. It seems that people with this way of thinking continuously engage in a process of 'reading and matching' (Hunt, 1987: ch 4).

For example, as we saw when discussing challenge 1, when competent teachers/trainers *design a session,* they scan the potential learning situation (using patterns developed from previous experience and frameworks like those outlined earlier in the chapter) to work out what is most likely to work effectively. Here they look at all the elements of the teaching and learning swamp (figure 1). What they are trying to do is to make sense of a highly complex number of factors by 'reading meaning' into the unique situation, much in the same way as you read meaning into or make sense of a book. They do this in order to work out what way of proceeding will best 'match' the unique requirements of that setting.

This process of reading and matching is complex and, typically, intuitive. The present (and unique) situation is seen as similar to (but never exactly the same as) a previous one. Once they see it as somewhat like a previous case practitioners with this way of thinking have an idea of what to do, because they recall what worked, or what they decided had to be done differently after reflecting on the previous case. Of course, what they decide to do in the present situation will never be exactly the same as before because each AVE circumstance is always a bit different from another. This process Schön (1983, 1983) calls 'see as—do as'.

A similar process occurs once they start to *put their plan into action*. Their stance enables them to accept that everything can't go according to plan, that there will always be some sort of unique twist or unexpected dilemma once the program is underway. They know that the dilemma has to be resolved on the spot, and that they will have to 'reflect in action' to do this. Again they scan previous patterns of experience to see if this uncomfortable situation is one they've encountered before. If they recall something similar they have a way of working out what might lie behind the problem and, in consequence, they are helped to see a way out of it.

Here they are more concerned with working out what the problem really is, what is *causing* the dilemma. What they are engaged in, therefore, is not so much a process of 'problem solving' as 'problem construction', something often ignored in discussions of professional competence.

Why is the process of problem construction (i.e. reading and matching) so important? As was pointed out when discussing challenge 1, life in AVE is so variable, complex and ambiguous that teaching and learning problems simply can't be expected to present themselves in an unambiguous way. The problem most of the time is that, when dilemmas present themselves, teachers/trainers often can't work out what the problem is—all they know is that things are not going as expected, that something is amiss. The art is to work out what the problem really is, that is, to try to read meaning into the situation with some accuracy.

Only after teachers/trainers have done the work of problem construction, only after they have *read* what is happening and have *matched* (decided upon) a suitable response must they then have a well-developed repertoire of performance skills to call upon. That is, they not only need to work out what to do but then you have to be able to skilfully 'deliver the goods'. And this is where the rest of the book comes in.

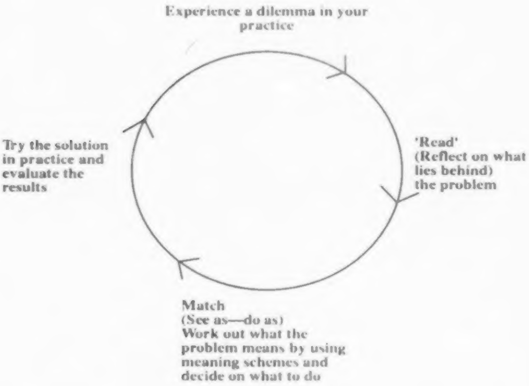
The whole process of reading and matching is cyclical and holistic not linear. Teachers/trainers experience a dilemma, they try to make sense of what the problem really is by using their repertoire of 'meaning-giving schemes'. This gives insights into what might be done, they try this and evaluate the results. If the dilemma remains they try again.

> *The process spirals through stages of appreciation, action and re-appreciation. The unique and uncertain situation comes to be understood through the attempt to change it and changed through the attempt to understand it (Schön, 1983: 132).*

The cycle of thinking or reflecting-in-action has much in common with Kolb's (1984) experiential learning cycle. It can be summarised as follows:

Figure 2

Reflection in action


Experience a dilemma in your practice
'Read' (Reflect on what lies behind) the problem
Match (See as—do as) Work out what the problem means by using meaning schemes and decide on what to do
Try the solution in practice and evaluate the results

Learning from experience

How do teachers and trainers develop the meaning-giving schemes which enable them to analyse the problem through *reading and matching*?

Firstly, they need to have had previous experience working in situations similar to their present teaching context. Secondly, they need to have reflected on this previous experience, to have worked out why things went well or why they didn't. This learning from experience is best done if they use overall frameworks like those put forward in the various tables and figures proposed in this chapter.

This idea of learning through reflection on experience is discussed in some detail by Boud et al. (1985). The more a current situation varies from the ones they have previously experienced the more adult vocational educators feel at sea. This is what happens when people first start teaching. They feel at sea because they are yet to build up relevant meaning–giving schemes to help them make sense of what is happening and what might be the best way to act.

If teachers/trainers never try new approaches, never reflect on experience, never talk with colleagues about what does or doesn't work, and if they never see colleagues in action, then the chances that they will build up a well developed repertoire of meaning–giving schemes is decreased. This is why good teachers and trainers aren't just people with lots of experience, they are people who have reflected on that experience, who have taken sensible risks, who have learnt from their errors, who have considered the consequences, people who are constantly trying to improve and expand their understanding of practice.

Meaning-giving schemes, like *stance*, are closely tied up with assumptions about what constitutes effective AVE (challenge 2). This is because, as teachers use these schemes to make sense of what is going on in a situation, they are simultaneously making judgements about what is worth attending to and what is unimportant. In this way reading and matching is closely aligned with the on-going process of informal evaluation noted when challenge 2 was discussed. This is why, in order to be competent, they must surface and critique their hidden assumptions about what is good and bad AVE and their assumptions about what distinguishes a competent from an incompetent student/trainee.

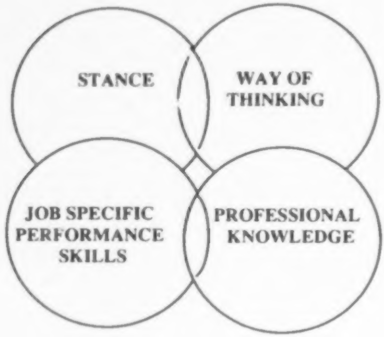
Summary

In summary, competent adult vocational educators need to possess a wide range of performance skills specifically relevant to their AVE teaching context. They must also have sound professional knowledge like that outlined in the discussion of challenges 1 and 2. They also must possess up-to-date subject knowledge.

However, in order to use these skills and this knowledge appropriately, they have to possess the stance and way of thinking discussed above. This more comprehensive definition of competence aligns with what the Australian government is seeking when it calls for 'clever' workers in all sectors of the economy. It is summarised in figure 3.

Figure 3

The competent AVE teacher



Developing the competence of our adult vocational educators

It is clear that, given the constantly changing context of AVE practice discussed when we looked at challenge 1, the professional learning of adult vocational educators cannot be 'one-off'. Instead it will have to be career long. This on-going professional learning must involve the continuous upgrading of both their subject content and their skills as educators. It requires a stance, way of thinking and organisational milieu which equips the trainer to engage in self–directed professional learning which is relevant, efficient and effective.

There are some things which teachers/trainers themselves can do personally in order to meet this challenge. There are also some things which other people (especially administrators and policy makers) can do at a more general level to help.

What teachers and trainers might do personally

The work of Alan Tough (1979) suggests that much significant adult learning is done without doing formal courses or staff development programs, that it occurs more personally, often using people rather than print as a primary resource.

Tough outlines how people undertake these adult learning projects in some detail. His research indicates that people consistently express dissatisfaction with their ability to carry out such personal learning projects efficiently and effectively. It seems that previous educational experiences ill-equip them to initiate and direct their own learning and that many people would welcome coaching on how to do this better. Thus, the managers of AVE now need to consciously help colleagues to become more effective at defining what they want to do in their individual professional learning projects, at locating really relevant learning resources quickly and at monitoring their own performance honestly and critically.

Some particular tactics that teachers/trainers might use to develop their skills in self–directed professional learning and their competence as adult vocational educators are:

- *talking* regularly and openly about teaching practice and discussing what constitutes 'effective and desirable' AVE with a knowledgeable friend or learning partner. (Critically discussing some of the ideas put forward in this chapter with this person might be of value. The work of Robinson et al. (1985) gives some practical tips on how this might best be done);
- *visiting* competent colleagues—seeing them in action, looking for approaches to organising learning which appear effective. Working out why these learning tactics are impressive and discussing this with the teacher concerned. Trying to observe people using the strategies outlined in the rest of the book and comparing what is seen with what is recommended in the book;
- *experimenting* personally with the strategies in this book and evaluating the results;
- *using the evaluation techniques* and planning approach outlined in the discussion of challenges 2 and 3 to develop systematic and critical thinking about practice and to identify any improvements necessary in skills, stance and way of thinking;
- *becoming more aware* of ways of preparing and delivering a session, using the framework discussed in challenge 1. Seeing how this compares with the idea of reading and matching;
- *reflecting on experience*. Noticing what aspects of daily practice are most disturbing and which ones are satisfying. Trying to work out why this is so using the various frameworks outlined in this chapter;
- *identifying* their stance when things go wrong. Comparing this with the type of stance adopted by the competent AVE teacher (table 4). Actively checking if they are implementing the elements of stance outlined in table 4. Most importantly, working on becoming comfortable with acknowledging and learning from their errors;

  Nothing shows the trained thinker better than the use he [sic] makes of his errors and mistakes (Dewey, 1933: 114).

- *trying to identify gaps* in their expertise. This would include attempting to identify how effective they are at reflection-before-action and reflection-in-action using table 4 and the discussion of it as a guide. It would include identifying performance skills that should be developed using the material outlined in the rest of the book;

- *working out* preferences they might have for any of the tribes of adult education outlined in table 2 and which they have an aversion to. Asking why this is so and discussing it with colleagues;
- *finding out* from successful colleagues how they have gone about their informal as well as formal professional learning—how they organise their time, their priorities and how they get useful answers to questions quickly and conveniently;
- *testing* the overall framework outlined in challenge 1 to see if it helps make sense of experience and helps identify important factors hitherto unrecognised. Using this framework to work out what is their responsibility and what is due to some force beyond their control.

The excellent book by David Hunt (1987) also contains a large number of exercises which will help develop skills in this area and surface hidden assumptions about teaching and learning.

What administrators and policy makers can do to help

What might administrators and policy makers do to help make career-long learning for individual adult vocational educators as efficient and effective as possible?

It is now very clear that the climate and culture of their particular place of work dramatically influence teacher/trainer attitudes to work, their productivity and the quality of their personal professional learning (Fullan, 1990a: 11-23 and Joyce, 1990: 35).

Therefore, the existence of individual trainers who have the personal commitment and skill to engage in continuous professional learning in the ways outlined above is only part of the answer. If their place of work doesn't encourage and reward them for working collaboratively , if it doesn't give time and credence to teachers observing each other and discussing their practice, if it concentrates only on 'administrivia' and 'busy work', if promotion criteria don't focus on the stance, way of thinking, knowledge and performance skills characteristic of the competent AVE teacher, if people feel that their attempts to improve their daily practice always go unnoticed, then individual teachers'/trainers' enthusiasm to continuously upgrade their professional content and skills will soon be extinguished.

To support more effective career-long professional learning in AVE administrators and policy-makers will have to re-frame their notions of staff development:

- away from mainly focussing on large off-the-job 'workshops' which bring together people from many different contexts and backgrounds;
- towards greater opportunities for informal, on-going, collegial interaction and collaboration and greater shared (as distinct from individual) responsibility in the workplace.

This, in turn, will require a significant shift in the culture of work in AVE. This process of culture change should be treated as an innovation in its own right by administrators and policy makers and be dealt with using the considerable research base on managing change in post–secondary education as a guideline (see Scott, 1990a).

Managing this process of culture change effectively will require:

- a more concerted attempt to clarify indicators for success in AVE in the ways suggested when discussing challenge 2;
- jobs to be re-defined;
- the institution of new staff selection and promotion procedures and performance appraisal systems which align more closely with research on what distinguishes highly competent teachers and administrators;
- the careful selection and development of key players like college principals or HRD executives;
- the introduction of incentives that directly reward collaboration, experimentation, mutual support, mentoring and coaching;
- a restructuring of work which allows teachers and trainers the time to observe each other in action and to focus on the discussion of practice;
- sustained support to help people used to working in isolation, and in competition learn how to work collaboratively and effectively with others; and
- a continuous attempt to identify and disseminate models of 'good' AVE practice across the organisation.

As Michael Fullan concludes in his contribution to the recent (1990) ASCD Yearbook, a volume dedicated to challenging traditional thinking about what constitutes effective professional learning for teachers:

> *Staff development will never have its intended impact as long as it is grafted onto [places of learning] in the form of discrete, unconnected projects. The closer one gets to the culture of [these places] and the professional lives of teachers, the more complex and daunting the reform agenda becomes. More powerful strategies are needed for more powerful changes* (Fullan, 1990a: 21).

There is, however, an even broader issue to be addressed by educational policy-makers. This concerns the need to ensure, as the recent Finn Report (AEC, 1990) on post-compulsory education in Australia recommends, that schools actively encourage the stance and way of thinking identified as being essential to competence and 'cleverness'.

It may be that much of our schooling in fact works at cross purposes to this objective, that many schools encourage a 'regurgitative' rather than 'creative' intelligence, that they encourage a stance which focusses on conformity, obedience, on competitiveness not collaboration, on an avoidance of ambiguity and so on. The effect of current approaches to assessment in schools would have to be considered in this context.

So, although part of the responsibility for ensuring that on-going professional learning in AVE is effective *does* rest with the individual teacher/trainer, part of it also rests with people like senior educational administrators and policy makers.

It is *individual teachers'* or *trainers'* responsibility to improve their skills in self–directed learning, to continuously assess the appropriateness of their personal stance, way-of-thinking, performance skills and subject knowledge and to address any shortcomings identified.

It is the responsibility of the senior administrators and policy makers to ensure that there is a much broader reformation of the stance, vision, structure, work priorities, selection and promotion criteria, incentives and culture of the institution in which teachers/trainers work so that these individual professional learning projects are supported and rewarded rather than hindered. It is also management's responsibility to get a more immediate understanding of the daily work reality of teachers and trainers and to take whatever steps are necessary to make this complex and difficult work as 'effective' as possible. It is their responsibility to look at the usefulness of various techniques for helping teachers improve their practice, to examine research on what makes effective organisations tick and to determine how to make the school system congruent with new, broader definitions of competence. There is a substantial literature available to support them in this work (see, for example, Fullan, 1990b) .

Summary

This chapter has focussed on three overarching challenges which have to be effectively tackled if the new expanded expectations of adult vocational education in Australia are to be achieved.

These challenges concern the need for adult vocational educators and administrators to come to grips with:

Firstly, how to cope with the increasing complexity, unpredictablility and variability which now characterises their daily work in AVE

Secondly, establishing what constitutes 'effective' AVE and training and how best to establish that these criteria are being met.

Thirdly, the need to develop a much clearer and more comprehensive picture of what the term 'competence' means as it applies to an adult vocational educator and how its development might best be supported.

The responsibility for tackling these challenges rests not only with the individual vocational teacher/trainer but also with senior administrators and educational policy makers.

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Notes

[1] There is a growing literature in the area of adult learning: some of the key things that seem to recur in research on adult learners is that they:
- usually have a wealth of experience which they like to be taken into account and used by the teacher
- often have competing responsibilities beyond the class and therefore look for effective and efficient pay offs in learning
- like a teacher who is able to give positive support, who listens to them and notices if they are having difficulties, is enthusiastic about the subject, is willing to praise them, has a sense of humour and is well prepared.
- like what is learnt in the classroom or on-the-job to be directly relevant to their lives and work beyond it. In particular they like theory and practice to be integrated.
- like to be helped to learn how to learn, that is to be able to take responsibility for what happens in their learning. They don't like, however, to simply be left to 'self direct', they like to be gradually coached to independence.

- like an overview of what is to be learnt, where they are headed and feedback on how they are going in meeting their learning targets
- like learning to occur in 'digestible chunks'
- like appropriate variety in teaching and learning methods and modes
- like, whenever possible, to learn by doing (remember the old Chinese proverb: 'I hear and I forget, I see and I remember, I do and I understand')
- like a learning enviroment which had few distractors and is suited to the learning tasks at hand
- may feel threatened by having to return to formal learning
- may experience a drop in physical ability, dexterity and short-term memory with age but other mental capacities (e.g. reasoning) can increase with age and experience
- may have different learning styles and these should be taken into account. Some people prefer to do things, others prefer to learn by looking or by reading and so on. Kolb (1984) gives one way of profiling these learning styles. It would be dangerous, in our teaching, to cater simply for each individual's learning bias. The ideal is to help all students be comfortable with all learning styles

We should always be mindful of the fact that people who write about and research adult learning do so from a particular perspective. My colleague, Mark Tennant, notes that cognitive theorists like Piaget, Bruner, Gagne, Kolb or affective theorists like Rogers and Knowles all write about learning from the perspective of the internal makeup of the person. On the other hand, behavioural psychologists like Skinner, Bandura, Pavlov or sociologists like Freire, Bernstein or Mezirow write from the perspective of the way external forces influence learning. I would urge caution in becoming too fond of one writer or one perspective. They all have something to teach us about the learner.

[2] Similar conceptions appear in research and writing concerning:

- worker and professional competence (e.g. see Field,1990: 30; Gonczi et al. 1990; NBEET 1990: 42ff; Mansfield 1989: 34; Marsick 1988; Masters and McCurry 1990: 12; Schon 1984, 1987).
- the nature of expertise (e.g. research in occupations as diverse as race track handicapping (Ceci & Liker 2986), chess (Chase & Simon 1973), medicine (Schmidt et al. 1990), the law (Lawrence 1988), dairy process work (Scribner 1986). The literature on expertise has been reviewed and implications for adult teacher education drawn by Tennant (1990).
- teaching competence (e.g. see Boud et al.1985; Hunt1987; Scott 1988), 1990a, 1991; the 1991 Australian National Review of Technical Teacher Education (p. 50), Fullan & Connelly 1987; Joyce & Clift 1984).

Section 2 Strategies

This section details a number of strategies which vocational teachers and trainers could use to help create what has been called the 'clever country'. While each chapter deals with a particular learning strategy they have in common the belief that teachers and trainers in the 1990s need to understand and to be able to use strategies which are learner centred and appropriate to adult students. As section 1 argues, a multi-skilled analytical creative workforce is a necessity for Australia's economic and social future. Such a workforce cannot be developed solely by the use of traditional teaching strategies which often encourage passivity and low level comprehension rather than high-order thinking skills.

The capacity to use the strategies outlined depend on teachers and trainers understanding the kind of personal reflective analysis outlined in section 1. Even after this has been undertaken, however, it needs to be recognised that many of the strategies detailed in this book cannot be expected to produce results in the short term. Most vocational students and adults in the workforce are the products of traditional learning environments in which critical thinking and self regulation have been less highly regarded than the ability to recall material or reproduce arguments. As is pointed out in chapter 5, any attempts to develop the capacities outlined are likely to meet with resistance resulting from psychological, institutional and wider societal pressures. Thus, in using learning contracts self-paced learning or games and simulations for example, the teacher or trainer can expect resistance from trainees/students who may resent having to make decisions for themselves, or could be anxious about doing so. Likewise, they are likely to face scepticism, even derision, from colleagues who may be threatened by having to analyse and justify their time-honoured teaching methods. These problems can only be overcome by demonstrating, over time, that the methods are successful. This will require teachers and trainers to develop a number of competencies in addition to those outlined in section 1. The communication competencies are outlined in chapter 3; the planning and evaluation competencies outlined in chapters 4 and 10 amongst others; the ability to encourage students to become self directed and accept being challenged and extended by their teachers at the same time, is outlined in chapter 5; ability to encourage critical thinking is examined in chapters 3, 6 and 10; ability to get students to reflect on experience is examined in chapter 8; and ability to engage in one-to-one teaching is outlined in chapter 7.

Chapter 4

Communication competence

Michael Kaye

Communication capacity is the essence of successful vocational education and training, argues Mike Kaye in this chapter. The implications of his thesis are that even if the challenges outlined in chapter 2, are met, teachers and trainers need to develop sophisticated communication skills and to understand the wider process of interpersonal communication in order to be effective.

The two major areas in which educators and trainers often face problems of communication are communication apprehension (or stage fright) and the management of interpersonal conflict.

Kaye points out that almost everybody experiences communication apprehension at some time—particularly when facing unfamiliar situations. He suggests that such anxieties can be overcome by working through a structured process which includes learning about the audience and planning thoughtfully—both of which he illustrates.

The management of interpersonal conflict in vocational education and training depends partly on one's stance and ways of thinking. Kaye argues, like Scott in chapter 2, that the key to managing interpersonal conflict is in providing opportunities to discuss differences in perceptions, needs and values. Nevertheless strategies for resolving conflicts, if they occur, are also needed—particularly the skill of principled negotiation. This skill depends on the capacity to understand the arguments of others and acknowledge the legitimacy of their interests. In addition there is a need to develop a capacity for ensuring mutual gain in any conflict. The communication capacities outlined in this chapter are essential to success in using the strategies outlined in section 2 of this book.

Introduction

Not so very long ago, a colleague suggested that the subject 'communication skills' be deleted from a course for the professional development and accreditation of vocational teachers and trainers. The reason given for this suggestion was that more emphasis needed to be placed on studying the process of helping people to learn. As far as this person was concerned, communicating with people and facilitating their learning were two different things. This chapter is grounded in the contrary notion that educational behaviours such as teaching, training, instructing, or facilitating the learning of others are contextually-specific aspects of interpersonal communication. Indeed, it would be extremely difficult to imagine any teaching or training occurring in the absence of communication between learners and their facilitators.

Assuming, therefore, that communication between teachers or trainers and learners is both a reality and an inevitability, it is reasonable to suggest that effective teachers and trainers are those who have developed competence in interpersonal communication. Such competence involves more than the mechanical application of simple, step–by–step procedures to improve specific aspects of communicating with others. Let's take an example. According to Decker (1988), communication is an art rather than a science. One of the critical components of this art is the way people use language. Decker (1988:56) has proposed a five-step plan for improving one's use of language. The five steps are: (1) use one new word a day, (2) use a dictionary, (3) watch your jargon, (4) talk in pauses, and (5) get rid of non–words like 'um' and 'ah.'

No doubt these are useful tips. Nevertheless, one could hardly believe that by obeying these simple suggestions alone, one would develop the art of communicating. An assertion of this type may be likened to the claim that people who have passed a basic first–aid course should be declared doctors, or to the claim that any amateur hobbyist should be entitled to recognition as a professional expert.

As well as cultivating a set of basic communication skills like active listening, questioning, explaining and demonstrating, for example, effective teachers and trainers need to understand why these skills are important. In other words, effective teachers and trainers should be capable of doing more than following rigid prescriptions for acquiring basic skills. To complement the performance of skills, competent professionals need to develop an understanding of interpersonal communication as a process. Additionally, competent professionals need to understand how the acquisition and refinement of each communication skill will contribute to the more global development of their ability to manage this process.

It may be useful at this point to differentiate the notion of 'competence' or 'competency' from the term 'skill.' 'Competence' has a broader and more embracing connotation than the term 'skill'. Peter (1975) pointed out that skills represent only one classification of competence. Traditionally, the major domains of learning identified by Bloom (1956) were the cognitive, affective and psychomotor. Nowadays, vocational teachers and trainers refer to these domains in the roughly equivalent terms of knowledge, skill, and attitude competency-areas. The important thing to note is that the possession of competence involves more than basic practical 'know-how.' Competence presupposes the professional's ability to conceptualise, theorise, and rationalise this practical expertise.

In his analysis of the competencies required for effective teaching, Peter (1975:8) commented:

> At a professional level, competency includes understanding the processes involved as well as having performance skills and an academic and theoretical background. This generally accepted concept of professional competence is the basis for differentiating between a professional and a technician. The technician's training emphasises performance skills whereas the professional's preparation includes more theoretical background, academic content, and higher-level abstractions.

It has often been said that people learn best when they have a clear understanding of why they are learning what they are learning. Effective learning, therefore, is goal-directed learning. Sensitive vocational teachers and trainers do not assume that people invariably learn for learning's sake. The error in this type of thinking is especially applicable in the case of adult learners. According to Cross (1983) who summarised research on why adults participate in adult learning experiences:

> Most adults give practical, pragmatic reasons for learning. Most are what Houle would call 'goal oriented.' They have a problem to solve, which may be as broad as the desire for a better job or as narrow as learning to raise better begonias. Many goal-oriented learners are apparently responding to transitions in which needs for new job skills or for knowledge pertaining to family life serve as 'triggers' to initiate learning activity.
>
> (Cross, 1983:96)

Effective vocational teachers and trainers, therefore, appreciate the need to understand why adults in various contexts and for a range of reasons are motivated to learn. It is a central theme of this chapter that understanding and performance are complementary facets of any competency. In the case of interpersonal communication competence, this is certainly the case, especially as interpersonal communication is viewed in this chapter from a social cognition perspective.

Putting this in another way, people construct meanings about their encounters and relationships with others. On the basis of these constructed meanings, individuals develop strategies for acting and behaving toward others. Thus, communication is a process involving both the way people perceive each other and the ways they consequently act toward each other. In simple terms, if I as a trainer form a favourable impression of one of my groups of adult learners, my actions and behaviour toward that group will be correspondingly favourable. In other words, my impression or perception of the group provided me with a basis for my actions towards individuals in that group.

For adult educators, including vocational teachers and trainers, the ability to communicate effectively with adult learners is critical. It would be true to say that adult educators need as much to be experts in understanding the motivations and personalities of individual learners, as to be specialists in their subject or content areas. Being knowledgeable or skilled in one's subject area is certainly important, particularly in the light of one's credibility with learners or students. Subject expertise is certainly a necessary, but not sufficient, condition for being an effective vocational teacher or trainer. A very able engineer, for example, will not necessarily become a very able teacher of engineering simply because of a highly successful record in engineering studies.

Because teaching and training are about helping people to learn, teachers and trainers need to develop competence in helping others. Communication is one interdisciplinary field of study which can provide a rationale for individuals to develop helping skills. According to Hansford (1988:xiv), 'teaching is a communicative act and thus it can be argued that the more we attempt to gain an appreciation of the communication process, the greater the potential for effective instruction.' Hansford (1988:15) reinforced this view by challenging the familiar thinking that is often expressed in such statements as 'I teach geography' rather than 'I help students learn geography.'

Perhaps this distinction is a pedantic one. It does, however, underscore the temptation to regard teaching or training primarily as a relationship between the teacher or trainer and a body of literature in a discipline or field of study. It is the relationship between teachers or trainers and learners which is crucial. The subject matter is the pretext for the establishment of professional teacher–learner relationships. Through their communication with each other, teachers and learners will devise ways of addressing the subject-matter appropriately.

In a now classic work, Egan (1975) suggested that helping professions, including teaching, needed 'skilled' helpers rather than merely credentialled helpers. Clearly, there are teachers and trainers with qualifications but without essential skills. Helping or facilitating skills form the very basis of instructional competence. If professional development courses for teachers and trainers fail to provide sufficient focus on the learning of helping skills, one can only conclude that teachers are assumed to be in possession of these skills at the time, or that these skills are considered by the course designers and presenters to be of minor importance. Should such assumptions ever be taken seriously, books like this one need never be written.

One further point to keep in mind is that mere exposure to information about ways of developing skills provides no assurance that the learner will become skilled. Consciousness-raising may be a necessary preliminary step to the development of skill. In itself, consciousness-raising serves the purpose of alerting learners to new possibilities for growth in knowledge, skill, or attitude. Like thinking, most learning, with the possible exception of incidental learning, is a process involving hard work, particularly in the application and practice of newly acquired information. Just because people may come to know reasonably quickly what they need to do and how this should be done, there is no certainty that they will actually be able to do it effectively. Take the example of learning to be assertive, or more simply, to stand up for one's own rights.

Consider the all-too-familiar instance of a teacher or trainer being required to assume additional duties with no evident compensation. Textbooks may inform such overworked people that they should stand up for themselves by stating, in rational terms, to their superiors at work, the undesirable consequences of accepting additional workloads. More often than not, in reality, individuals, whilst appreciating in theory the need to be assertive, find it difficult to behave assertively toward their senior colleagues. Many novice teachers or trainers are simply afraid that their superiors would construe assertiveness as some form of unco–operative behaviour. Ultimately, these teachers would fear the deterioration of their relationships with senior colleagues and the possibility of being subjected to subtle reprisals or punitive actions.

There is a major implication for teachers and trainers arising from this preceding argument. One cannot learn something for someone else. Since the early 1970s, when there was a push for inquiry–based and discovery–based curricula, effective learners began to be conceived as active, problem–solving oriented, self-monitoring and independent individuals. As Postman and Weingartner (1972:41-42) have observed:

> good learners, like everyone else, are living, squirming, questioning, perceiving, fearing, loving and languaging nervous systems, but they are good learners precisely because they believe and do certain things that less effective learners do not believe and do. And therein lies the key... good learners have confidence in their ability to

> learn...good learners tend to enjoy solving problems... good learners seem to know what is relevant to their survival and what is not... good learners prefer to rely on their own judgement... good learners are not fearful of being wrong... good learners are emphatically not fast answerers ... good learners are flexible... good learners have a high degree of respect for facts... and are skilful in making distinctions between statements of fact and other kinds of statements.

Good teachers and trainers are correspondingly people who help learners by giving them the opportunities to be good learners and to do what good learners do. What good teachers and trainers need to accept is that not all learners will want to be good learners of the kind described by Postman and Weingartner. Even more so, teachers and trainers may be able to motivate their learners extrinsically, but there is no way they can make their students or participants intrinsically motivated to learn. Only the learners can do that. As Postman and Weingartner (1972:59) also noted:

> there is no way to help a learner be disciplined, active and thoroughly engaged unless he [sic] perceives a problem to be a problem or whatever is to-be-learned as worth learning, and unless he plays an active role in determining the process of solution... unless an inquiry is perceived as relevant by the learner, no significant learning will take place.

The possession of interpersonal communication competence is an asset to vocational teachers and trainers in developing some understanding of their students' motivations. Teacher–student relationships where honest, open disclosures of learners' attitudes, concerns, needs and values are not seen to be threatening events, are likely to be characterised by empathic and non-judgemental communicative behaviours on the part of the teacher or trainer. Of course, it is difficult to imagine this kind of relationship occurring in many conventional, formal adult-based learning situations.

For example, in traditional lecture courses in some universities, it would be rare indeed to find students publicly expressing their lack of interest or satisfaction with what they are learning, particularly at undergraduate levels. To a large extent, the inability of many students to voice their true feelings and attitudes may be due to the fear of professors whose primary aim is the pursuit of knowledge for personal reasons rather than the facilitation of the learning of their students.

It would seem appropriate to conclude this introductory section with an overview of the kinds of situations which vocational teachers and trainers typically encounter and which require vocational teachers and trainers to develop helping skills as part of their ability to communicate effectively with adult learners. Years of experience with numerous groups of college and university undergraduate and postgraduate students, with trainers from public and private organisations, with teachers from different educational systems and with a variety of other kinds of adult learners have led the present author to isolate two major areas of common concern to these client groups. The first is what is popularly referred to as 'stage fright' and is known in the research literature as 'communication apprehension.' The second involves the management of interpersonal conflicts in professional settings. Both of these problem areas constitute the main substance of this chapter and will be examined in detail in the next section.

What this chapter will not do is provide the reader with a summary of basic interpersonal communication skills normally discussed in appropriate textbooks on the subject. Instead, relevant skills will be briefly explained in specific relation to the two problem-areas referred to above. These skills represent part of the communication competence needed by teachers and trainers to perform their work in a thoroughly professional manner. They are by no means the only skills which make up the facilitative repertoire of effective vocational teachers and trainers. Neither are they skills which can only be performed in the ways suggested for the two problem-areas discussed in this chapter.

The management of communication apprehension

Even the most confident of people experience moderate degrees of anxiety and stress when faced with situations which are unknown, unfamiliar, or threatening. Naturally, individuals differ in the extent to which their discomfort actually shows and ultimately affects their performance. In most cases, stage fright occurs when people, usually with limited experience or training, are required to address a new audience. The phenomenon of 'stage fright' is well known and has been studied by communication scholars in recent years. Scientifically, stage fright has been termed 'communication apprehension' and has been the subject of much scholarly interest for many years (Clevenger 1959; McCroskey 1977; Hansford & Hattie 1982; Buller 1987). For the most part, this research on communication apprehension has focussed on the *learner* rather than on the *facilitator*.

Communication apprehension has been defined as 'an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons' (McCroskey 1977:78). Nearly all people, at some stage in their lifetimes, experience communication apprehension. The fear of communicating with particular persons is not a symptom of abnormality. It is rather a fairly typical response to situations the apprehensive persons find threatening. In the case of vocational teachers and trainers, the incidence of communication apprehension is quite noticeable during the beginning phase of their actual classroom teaching. Very often, new vocational teachers and trainers have had no previous experience of face-to-face communication with groups of learners. As a result, they tend to develop a lack of confidence in their ability to facilitate the learning of others in face-to-face settings, particularly where the size of the learning group appears to be relatively large for an individual to manage.

When communication apprehension brings with it feelings of no confidence, teachers are prone to experience both discomfort and uncertainty. One possible reaction of these teachers is to find some way of reducing this uncertainty, usually by searching for more information about those who are perceived to be threatening. The results of a recent study, however, led to the conclusion that 'levels of uncertainty and information-seeking are not associated' (Kellerman and Reynolds, 1990:50). An alternative way in which communicatively apprehensive teachers could react to threatening situations is to devise methods of avoiding them. As Hansford (1988:147) has reasone:

> faced with a communication setting that causes discomfort, the choice exists of 'fight' or 'flight'. Normally a highly apprehensive communicator will choose 'flight', but on occasions 'fight' is a path of action, despite the high level of discomfort.

Regardless of whether apprehensive teachers choose to fight or flee, the disruption to learning and teacher-learner communication can be serious. On this point, Bassett and Smythe (1979:234) have commented that:

> … communication apprehension can become a disruptive factor in classroom life. Consider the impact of an apprehensive teacher combined with apprehensive students on the social environment. The potential for developing a healthy exchange of feelings, or even minimal relating between teacher and student or student and student, is virtually nil. We would also anticipate that negative effects on learning might occur.

Bearing in mind that Bassett and Smythe are referring particularly to the disruption of students' learning, the suggested strategies for addressing communication apprehension are applicable essentially to learners rather than facilitators of learning. These strategies include badgering or forcing the apprehensive learner to communicate orally, ignoring the learner, or using some form of praise or reward to bring about the desired change in the learner's oral communication. The reader will readily appreciate that these strategies are, in effect, alternative behaviour modification techniques. In order, they represent punishment, extinction, and reinforcement.

Of these three alternatives, the use of positive reinforcement is generally recommended (Hansford 1988:153; Bassett & Smythe 1979:234-235). Punitive methods may lead to defensive learner reactions and are consequently unlikely to reduce levels of communication apprehension. Again, ignoring apprehensive learners by not requiring them to participate orally, may have the effect of fostering a self-fulfilling prophecy. As Hansford (1988:152-153) notes, when learners are not asked to communicate or become involved 'they are reinforced in their desire to avoid interpersonal communication and may become even more apprehensive.'

In the case of vocational teachers and trainers, strategies for helping them overcome problems of communication apprehension are very much the responsibility of teacher educators and professional developers working collaboratively with trainee teachers and trainers. Given that such trainees are adults, the use of behaviour modification techniques is probably less appropriate than some means of developing confidence in simulated non-threatening environments like micro-training laboratories with video recording and play-back facilities. Once trainees have practised and modified their communication with others as a result of reviewing their videotaped performances, they will be more likely to develop confidence in relating to and helping their groups of learners.

To address the problem of communication apprehension constructively, vocational teachers, trainers and teacher educators are invited to work through the following process. First, educators should know their audiences. Presenting a message to an audience of learners with unknown or undetermined characteristics and needs can be a highly stressful exercise. One way of identifying the needs and characteristics of instructional groups and of individual members within those groups is for teachers and learners to devote time at the very beginning of their professional association to get to know each other. There is really no substitute for dialogue between learners and their facilitators if effective learning is to take place. By establishing the precedent for dialogue at the outset, facilitators will find it easier to initiate communication with their learners on future occasions.

Unfortunately, many inexperienced new teachers and trainers fail to take this first step. Very often, their tactic to mask their apprehension to communicate is to engage in monologue rather than dialogue. Consequently, their audiences are confronted with autocratic and didactic models of instruction instead of models of shared learning and helping. The tendency for new teachers and trainers to 'take over' is indicative of the naive belief that learners will learn merely as a result of information being 'imparted' or 'transmitted' to them by instructors. Similarly, it seems odd to speak of people 'conveying' meanings to others. Meanings are not conveyed through some form of one-way communication. They are individually constructed and, through the process of two-way communication and dialogue, may be shared, co-ordinated, and reciprocated.

It is suggested that terms like 'impart', 'transmit' or 'convey' are not useful in relation to vocational teaching and training since the implicit focus is on the activity of the instructor rather than on the learner. If the learner has not learned or changed in some way, it does not really matter whether the teacher or trainer imparted, transmitted or conveyed material. What the learner does with the information-to-be-learned is the important thing. This last point must be the major key to reducing apprehension and uncertainty. If teachers and trainers can see evidence of learning taking place, they need feel less concerned as to whether their helping skills are being appropriately applied.

Apart from taking the time and effort to know the needs and characteristics of their audience members, effective vocational teachers and trainers should plan their instructional sessions thoughtfully and thoroughly. In so doing, they will find it useful to build into their instructional preparation a set of questions serving as criteria to determine the suitability of their contemplated communication strategies. It is suggested that if any of these questions cannot be answered easily, the potential for indecision, discomfort, uncertainty and, ultimately, communication apprehension is probably being signalled. The following is a sample of the kinds of questions adult educators might ask themselves in order to ensure that their instructional planning, including the combating of their potential communication apprehension, has been thorough:

- How do I overcome my initial fear of facing a group of learners I have not met before?

- What do they expect of me as their facilitator?
- What do I expect of them as learners?
- Are my expectations realistic? Are theirs? How do I know?
- Have I made any attempt to share expectations with the group of learners?
- How should I dress for my meeting with this group of learners?
- What if I become tongue-tied? Should I speak slowly or quickly?
- Do I want to do all the talking? Or do I want the audience members to become actively involved?
- How can I structure the learning episode so that all the learners will want to take part in discussion?
- Do I know what the real point of this learning episode is? Is my planning based on what I as the facilitator want to do or say? Or is my planning based on what the learners should be able to do as a result of their learning experience?
- Have I remembered to keep my message simple and straightforward? Or have I lapsed into jargon and unnecessarily complex ways of saying what I want to say?
- Is my message tailored to fit my audience? Is it too advanced or too easy?
- What are the telltale signs that the motivation of the learning group is diminishing? Are there non-verbal indications that the learners are becoming bored or restless?
- What should I do if I sense that the learning group is losing interest? What provision in my planning have I made to address this contingency?
- What will I do if I forget the point I am trying to make?
- How will I know if the audience has understood my message in the way it was intended to be understood?
- What safeguards have I built into my planning to counteract the possibility of audience members side-tracking me by asking irrelevant questions?
- What if very little or no apparent learning takes place when I am facilitating?

This list of questions which facilitators can ask of themselves when planning their instructional sessions is by no means exhaustive. Readers are invited to add questions of their own. Often questions pertaining to particular individuals arise as a result of actual experience. What is important to remember is that the asking of and finding possible answers to these sorts of questions will very likely minimise the incidence of communication apprehension. When vocational educators have gone through the exercise of planning and thinking through their concerns, they are more likely to reduce their levels of uncertainty and, correspondingly, their degree of communication apprehension, than they would if they had not undertaken any planning.

Whilst planning can reduce uncertainty and apprehension, it is probably worth noting that over-confidence may be equally undesirable. It is not a bad thing to experience mild levels of excitation, arousal, or what is commonly referred to as 'butterflies in the stomach.' As long as these moderate levels of arousal do not lead to dysfunctional behaviour or communication, they can help to keep individuals alert and adaptable. Just as excessively high levels of psychological arousal may produce anxiety, discomfort and apprehension, low levels of arousal due possibly to over-confidence, may lead to complacency and poor adaptability.

Finally, it is always useful to learn from experience. If facilitators have felt apprehensive on occasions when facing groups of learners, they may find it useful to reflect, after the event, on the reasons for their apprehension and on the manner in which they tried to balance their emotional state. Looking back on what has transpired is not a threatening exercise. It is the productive and constructive opportunity educators have to determine what worked well, what went wrong and why, and what they would do differently next time. One aspect of being an effective adult educator, therefore, is to be able to capitalise on experience and develop and improve expertise as a result. In effect, reflection may be described as the retrospective analysis of an event, including the identification of any damage which occurred in the event. As such, reflection can serve as a basis for the generation of strategies to prevent future damage.

If vocational teachers and trainers continue to experience severe levels of communication apprehension, despite the careful planning and subsequent analysis of instruction, they would do well either to seek the more specialised help of clinical psychologists or to ask the serious question of whether they are pursuing the appropriate professional career path. In most cases, attention to planning and retrospective analysis will go a long way to reducing communication apprehension. Where apprehension persists, any consequent breakdown in the relationship between learners and facilitators can lead to problems of interpersonal conflict. The following section of this chapter, therefore, examines the various ways conflict may manifest itself in adult and vocational educational settings. In keeping with the theme of this chapter, conflict is understood from a human communication perspective.

According to Bolton (1979:206), 'to be human is to experience conflict.' Much as people may detest the prospect of conflict with others, they would do well to remember that conflict is an inescapable part of life. Conflicts are unavoidable regardless of whether they occur at work or at home. Recognising the inevitability of conflict is a good starting point for learning how to deal with it when it arises.

Why do conflicts develop? One suggestion is that 'conflicts arise because people may have to interact in the same situation but they see the situation very differently' (De Bono 1986:47). Several factors contribute to the ways in which individuals approach certain situations. For example, the extent to which the situation is unfamiliar and therefore perceived by someone to be potentially threatening or unpleasant is a powerful determinant. Clearly, for various reasons, individuals will differ in their assessment of situations being pleasant or unpleasant, and threatening or non-threatening.

In general terms, there are other hypotheses to explain why conflicts between people occur. As well as the possibility of people perceiving the same situation differently, interpersonal conflict may occur because communicating individuals may differ in their needs, because communicating individuals may differ in their thinking styles and these thinking styles may in turn encourage the people concerned to disagree, or because conflict may be something expects us as individuals to engage in (DeBono, 1986: 47-78).

When linked with the context of vocational teaching and training, conflicts between groups of learners and their instructors often arise for fairly obvious and educationally-specific reasons. In many instances, learners may clash with their teachers over issues like assessment of learning performance, assignment workloads, time limits for completion of due work, or the observance of acceptable standards in class attendance. When instructor–learner conflicts over these kinds of issues involve individual learners, honest and open communication between the persons involved usually results in a satisfactory resolution of the perceived differences. The sharing of personal beliefs, attitudes and values can be both illuminating and constructive.

On the other hand, vocational educators generally find it more difficult to handle conflicts between themselves and whole groups of learners at any one point of time. Confronting hostile groups of students can be very daunting for vocational instructors, especially in the early stages of their professional careers. In the face of apparently inexplicable opposition from student groups, vocational instructors may resort to interpersonal games or tactics which in the long run could lead to relatively permanent damage to the student–teacher relationship.

For example, Lett (1971) identified a number of 'games' inexperienced teachers are prone to play in the hope of repairing damaged relationships with their students. These games vary from 'the tea and sympathy game' where teachers attempt to win the affection of their students, and 'the doormat game' in which teachers allow their students to walk all over them, to the 'stick 'em up game' which is clearly based on an adversarial model of communication between learners and facilitators. Similarly, Kaye (1975) showed that depending on the nature and level of the educational setting, teachers commonly play one of two games. In high schools, for instance, teachers may be tempted to participate in the 'classroom war game' in which students are seen to be the enemy. Alternatively, in higher education settings, lecturers and professors may develop 'the guru syndrome' which presupposes their expectation that their students will revere them as their mentors.

As a general rule, it is worth remembering that, if it is at all possible, the prevention of conflict before it surfaces is preferable to the task of dealing with conflict once it has become manifest. This is not to say that vocational educators should approach every group of learners with the defensive expectation that conflict will, more often than not, break out. What is being suggested here is that much of any possible conflict between learners and their facilitators will probably be minimised if opportunities are created by facilitators for the discussion of differences in perceptions, needs, thinking styles or whatever. In this connection, Dawes, Orbell, Simmons and van de Kragt (1986) believe that through discussion, group members tend to become more co–operative because they develop a sense of group identity. As well, they suggest that discussion provides individual members with opportunities to pledge continued co-operation. On the other hand, the suppression of open communication and debate is likely to lead to mistrust between learners and facilitators. Ultimately, this mistrust could in turn lead to undesirable communicative acts like lying and deception.

Just as the development of an open, supportive and non-threatening learning environment is one positive move vocational teachers and trainers can make toward the prevention of interpersonal conflict and the corresponding reduction of any need for conflict, vocational educators will find it useful to have a general strategy both for the detection of impending conflict and for the management of the conflict once it has surfaced. Ideally, of course, one would want to speak of a strategy for resolving conflict whenever it occurs. Unfortunately, not all conflicts are totally resolved even though they may have been brought 'under control.' Nevertheless, if conflicts are managed intelligently and sensitively, in time the conflicts may have become so inconsequential as to render them pointless.

Since vocational teachers and trainers are responsible for the well-being and learning of their students, they are in effect obligated to deal with conflict when it arises. This is not to say that, especially with groups of adult learners, the responsibility for the prevention or management of conflict should not be shared by the contending parties. Often conflicts can be brought to an end if all those involved accept some of the blame for causing them, and are thus prepared to work toward their resolution. However, in formal learning settings like training or lecture rooms, professional educators are normally expected to be 'in control' when interpersonal problems occur. Indeed, when teachers fail to deal with such problems, they are often perceived both by their students and peers to be lacking in the critically important competence area of communication management.

As communication managers, therefore, vocational educators should be able to exercise leadership in the management and resolution of interpersonal conflicts. In the event that all their efforts for the prevention of conflict have been unsuccessful, vocational educators will need to have devised general purpose conflict management strategies. It is very probable that all general purpose conflict management strategies would presuppose the possession of some measure of skill in negotiation as essential.

Everybody needs to negotiate at some time or another. According to Fisher and Ury (1986:xi), 'everyone negotiates something every day… Negotiation is a basic means of getting what you want from others, it is back-and-forth communication designed to reach an agreement when you and the other side have some interests that are shared and others that are opposed.' Some people are 'soft' negotiators. This means that they are quick to make any kind of concessions in order to avoid or prolong conflicts in which they would be personally involved. 'Hard' negotiators, on the other hand, see conflicts in win-lose terms, and would do whatever possible to come out winners.

The soft-hard dichotomy is essentially a representation of extreme positions. In reality, when people negotiate they use elements of both hard and soft styles. Fisher and Ury (1986) refer to this third style as 'principled negotiation' which they distinguish from 'positional bargaining.' Whilst positional bargaining is like the behaviour people engage in when they haggle over the purchase of some goods or commodities, principled negotiation is aimed at the resolution of conflicting interests through the application of mutually fair standards and the search for mutual benefits.

Vocational educators will go a long way in their development of communication management competence by learning to be effective in principled negotiation. In essence, principled negotiation is made up of a number of elements which collectively could be regarded as a general purpose strategy. This, then, is one strategy which vocational educators could use when faced with the prospect of managing interpersonal conflict.

The first element concerns people. As a starting point in principled negotiation, the conflict manager needs to separate the people from the problem. The failure to separate people from the problem creates a situation where the conflicting individuals take positions. Inevitably, people feel strongly about the positions they are defending. Thus, in positional bargaining the main reason for the conflict is exacerbated by the additional problem of competing emotions. As Fisher and Ury (1986:11) suggest, in principled negotiation 'figuratively if not literally, the participants should come to see themselves as working side by side, attacking the problem, not each other.'

In the case of vocational educators experiencing conflict with their groups of learners, the element of separating people from the problem is highly applicable. For example, if students appear to resent their assigned home study workloads, facilitators will find it helpful to focus attention on what needs to be learned rather than on deficiencies in the motivation and performance of individual students. Unfortunately, adult learners often resort to childish behaviour, to special-interest pleading tactics, or to emotional appeals based on instances of personal disadvantage. When these kinds of displays occur, facilitators may find it difficult to apply the element of separating people from particular problems. Despite these difficulties, however, facilitators should strive to focus attention on actual educational problems rather than on personal excuses offered by learners for failure to perform.

In separating people from the substance of the problem, facilitators should remember that conflicts do not reside in objective matters but rather in people's minds. One of the things successful negotiators can do is to perceive how others involved in disputes feel. In other words, they can put themselves in other people's shoes. As Fisher and Ury (1986:23-24) emphasise:

> the ability to see the situation as the other side sees it, as difficult as it may be, is one of the most important skills a negotiator can possess, it is not enough to know that they see things differently, if you want to influence them, you also need to understand empathically the power of their point of view and to feel the emotional force with which they believe in it.

Let's consider the contrasting perceptions of an adult learner and that learner's instructor as they negotiate the grade for a recently submitted assignment:

Learner's perceptions	*Instructor's perceptions*
The assignment was too difficult/hard.	The standard was right for change.
The topic was ambiguous.	The topic was quite clear.
The grading is too severe.	Other instructors are even tougher.
The instructor expects too much at this level.	Expectations are realistic.
Not enough time allowed for completion.	Generous time limits. Students should spend less time lazing about in the recreation area and cafe.
Inadequate criteria and guidelines provided.	No more spoon feeding of students.
Unaware of any need to research the topic.	Writing off the top of one's head is unacceptable.
Joe Bloggs did the same as I did but still got a better grade.	Joe Bloggs probably did the original work and you just copied the idea.

Just because effective negotiators understand the points of view of others does not mean they have to agree with these notions. Nevertheless, knowing how others think and feel enables negotiators to revise their own views if necessary or applicable. In the case of the differing perceptions of learner and instructor, it may be that the instructor will need to spell out his/her expectations more clearly in future. On the other hand, the student would do well to admit to a lack of conscientious effort in completing required work.

The second element of principled negotiation involves a focus on interests, not positions. Most conflicts begin as conflicts of interests, but can easily develop into conflicts of position. Haggling over positions is typical of positional bargaining and may well be the appropriate method in such places as courts of law where positions are either legal or illegal. In other contexts, however, there are rarely only two possible diametrically opposed positions. Often, through an exchange of interests, negotiators may discover some alternative mutually acceptable path to resolving the problem.

Among the most powerful of interests are the human needs of people. Thus, an important question for negotiators to ask is 'why?' For example, why did my trainer require me rather than someone more confident to give the first presentation in this training session? Let's look at some possible differences in the interests of both the trainer and trainee.

Trainer's interests	*Trainee's interests*
Wants to help trainee gain confidence quickly.	Wants to avoid risk of appearing incompetent.
Does not want trainee to see other more confident people performing beforehand.	Would like to see how others make out and to learn from observing.
Does not want to increase trainee's communication apprehension by delaying moment of presentation.	Would like to grow in confidence as a result of seeing others do it.

Naturally, 'why?' questions may serve to reveal areas of mutual interest. For instance, in the situation of the trainee presenter, both trainer and trainee appear to want the trainee to develop confidence. Where they seem to differ is in the way such confidence could be developed. The problem is actually about the timing of the presentation. Whilst the trainee would like a little time before making the presentation, the trainer is prepared to throw the trainee into the deep end right from the start of the session.

A useful way of addressing competing answers to 'why?' questions is to ask 'why not?' questions as a follow-up. 'Why not?' questions have the effect of unlocking doors to alternative perspectives. By asking 'why not?', negotiators are in fact forcing themselves to think about their choices in acting and communicating. In applying the 'why not?' technique, the trainer may have focused attention on the trainee's interests and in particular on the trainee's fears and apprehension. Alternatively, through asking 'why not?', the trainee may come to realise something of the trainer's motive in not generating a climate of persisting uncertainty and threat by requesting an early presentation.

The third basic element of principled negotiation requires negotiators to invent options for mutual gain. The notion of 'inventing' is, of course, antithetical to the usual temptation of making premature judgements about the most desirable option. Fisher and Ury (1986:62-67) suggest that one way of inventing options is to have all negotiating parties brain-storm a set of mutually acceptable alternatives. Techniques like the Nominal Group Technique (NGT) would be particularly useful in this connection.

Let's consider a teacher-student conflict about the student's disruptive behaviour in class. It would be easy for the teacher to resort to one of several standard options like reporting the student's misbehaviour to a superior for disciplinary action, or to demand that the student leave the room. These sorts of options are based on premature judgements about what it would take to prevent the student from continuing his pattern of misbehaviour.

An alternative approach would be for the teacher to meet with the student privately after class and then jointly to consider what could be done to remedy the situation. At least in this approach, through collaborating with the teacher, the student is given the opportunity to work out a method of changing his problematic behaviour. Furthermore, the approach does not threaten the student with some form of punishment or public humiliation. In fact, an advantage of the collaborative approach is that the teacher may be able to discover why the student continues to engage in such unsatisfactory conduct. In the event that the reason becomes obvious, the teacher is in a better position to be empathetic and to invent realistic and appropriate options.

I can recall such a student who was once severely punished by his teacher for misbehaving in class. The teacher who meted out the punishment made no attempt to find out why the student's conduct was so bad. When I asked that student what was wrong, he told me that his brother had been killed several weeks before in a hit-run motor incident. He had been very close to his brother and had lost nearly all control over his emotions. Had the teacher who punished him taken the trouble to find this out, his choice of option may have been quite different.

The fourth element of principled negotiation requires one to insist on objective criteria. This means that the basis for negotiation ought to be independent of the will of both sides. Obviously, negotiation is unlikely to be successful when the will of one side is pitted against the will of the other. According to Fisher and Ury (1986:91), in developing a procedure for negotiating with objective criteria, negotiators should try to 'frame each issue as a joint search for objective criteria.' Thus, although both sides may have conflicting interests, it is still possible for both sides to identify common goals.

In educational settings, the common goal for both learners and instructors is learning. If learning does not take place, there is no justification for pointless instruction or related activities. Consider the situation where a group of learners consistently arrives half an hour late to a two-hour evening class. The instructor has finally admonished the offenders and has issued a warning that late comers in future will be penalised in their grades. What has happened here is that the instructor has assumed a stand or position without applying any of the elements of principled negotiation. In actual fact, what the instructor and students need to do is to tackle the problem systematically by addressing each of the elements of principled negotiation.

This problem could be approached in the following way:

- *What is the problem?* The problem is that one-quarter of the face-to-face allocation for instruction is not being used. Hence, the class time each week for students and the instructor [illegible] address new material is significantly reduced. Many teachers, however, would see the problem as one of unpunctuality. The point is, of course, that punctuality in itself is not an educational objective. Punctuality is a desirable student characteristic which potentially assists the attainment of the goal of learning.

- *What are the interests and needs of the conflicting parties?* Whilst the instructor would like classes to commence and finish on time, it is possible that students may find it difficult to arrive by the 5.00 pm scheduled starting time because they don't finish work until 4.45 pm. Travelling from work to college can take up to an hour, especially during the peak hour traffic period.

- *Apart from the threat of future penalties, what constructive and mutually-beneficial options can be devised by the conflicting parties?* One possible option may be to delay the starting time of the class by half an hour. If this is not possible because of the unavailability of teaching rooms after 7.00 pm, another option may be to hold 90-minute classes each week and then schedule additional two-hour sessions on every fourth weekend. Various alternatives are conceivable so long as the people in conflict are prepared to communicate rationally on the issues concerned.

- *Lastly, the students and their instructor need to explore objective criteria for arriving at a solution to the problem of losing face-to-face time in class each week.* Examples of objective criteria might include room availability (as previously suggested) or the teaching commitments of the instructor who may have another class at 7.00 pm. In some fields, laboratory assistants may be required and if they are required to be present after certain hours, the college will be forced to make expensive overtime payments. Many objective criteria, therefore, are based on issues of practicality rather than on the relative merits of opposing positions.

In adult vocational learning settings, problems like the one just analysed are fairly common. They can generally be resolved if the learners and their facilitators are prepared to communicate and negotiate in a principled and systematic way on lines similar to those suggested in this section. In the event of any uncertainty negotiators may have about choosing the fairest and most beneficial option, they would find it useful to consider their best alternative to a negotiated agreement (BATNA). The BATNA is the standard against which any agreement should be measured. As Fisher and Ury (1986:104) suggest, the BATNA

> is the only standard which can protect you both from accepting terms that are too unfavourable and from rejecting terms it would be in your interest to accept. Your BATNA ... also has the advantage of being flexible enough to permit the exploration of imaginative solutions. Instead of ruling out any solution which does not meet your bottom line, you can compare a proposal with your BATNA to see whether it better satisfies your interests.

Take the case of a vocational trainer who has been given an unrealistically excessive up-front training load. What is that trainer's BATNA? To look for a similar training position in another organisation? To lodge a formal complaint with the organisation's ombudsman? To seek support from the industrial union? Whatever the trainer's BATNA may be, it will become the standard against which the option of a negotiated agreement will be compared. In other words, will the trainer be better off negotiating a reduced workload instead of seeking employment elsewhere, or lodging a formal complaint, or seeking union support?

Undoubtedly, the reader will find other approaches for developing skill in negotiation and the management of conflict. The strategies suggested in this chapter are endorsed by practitioners in such fields as organisational psychology (Egan 1985; Egan 1988) and interpersonal communication (Myers &

Myers 1988; Saunders, Kaye, Gilpin & Collingwood 1990). As such, these strategies provide a sound starting point for vocational educators to develop skill in understanding and managing interpersonal conflict. Finally, it is important to note that the suggested strategies are in effect based on fundamental principles of interpersonal communication, especially principles of person perception and the shared and co-ordinated construction of meaning between the people involved.

Summary and conclusion

In this chapter, two areas of concern for vocational teachers and trainers have been examined from an interpersonal communication management perspective. The first of these—'communication apprehension'—is effectively an interpersonal phenomenon. The second area of concern involved the handling of relationship breakdowns between students and instructors. This area was seen as being within the framework of interpersonal communication competence. For both areas of student concern, problem-solving strategies have been advocated and outlined.

Many deep issues and points are embedded in the commentary which makes up this chapter. Readers may find it useful to identify these issues for discussion in group learning sessions. For those wishing to follow-up on the matters raised in this chapter, several exercises and activities are recommended at the conclusion of this commentary. It is also strongly advocated that readers consult the various references listed at the end of this chapter.

Finally, the reader is reminded that the particular strategies outlined in this chapter are specific examples of how vocational educators could develop competence in interpersonal communication management. Both the understanding and addressing of interpersonal problems from a communication management perspective represent complementary aspects of this competency area. Since the facilitation of learning may be regarded as a specific form of interpersonal communication, the development and refinement of new instructional communication strategies and skills will help vocational teachers and trainers to both personalise and professionalise their field of practice.

Discussion questions and follow-up activities

- Think of a time when you felt apprehensive about communicating with a new group of students or trainees. How did you tackle the problem of your fear of communicating with your student or trainee group?

In the light of strategies suggested in this chapter, would you confront your communication apprehension any differently if you experienced it again? What steps would you take to develop your confidence? Now, share what you have thought out with a colleague who has also been considering these questions. Compare your ideas and views.

- You have just been told by one of your students/trainees that due to pressures from his employer to do overtime work he will need to miss about fifty per cent of your scheduled class sessions. Whilst he is aware that he will be in breach of college/institutional attendance regulations, he wants to know if there is any other way he can complete the course requirements satisfactorily. As his teacher/trainer, you are bound to uphold the rules of your college/institution but you are nevertheless sympathetic to the plight of your student. How do you propose to deal with his problem? Share your thoughts with others who are likely to be experiencing similar professional problems.
- Apply the Fisher and Ury four-step procedure for principled negotiation to any of the following interpersonal conflicts capable of arising in adult vocational educational settings:
  1. One of your students/trainees has non-verbally expressed dissatisfaction with the present learning session. That student's/trainee's display of sighing, looking bored etc. is clearly being noticed by fellow students/trainees. What are you going to do about this student's/trainee's behaviour and its effect on the rest of the learning group?
  2. You have asked one of your students to resubmit an unsatisfactory piece of written work. The student in question wants to debate your ruling in the hope that you will relent and concede a pass grade. How do you propose to handle this?
  3. You have a group of learners who have clearly indicated they don't enjoy participating in activities involving games and role plays. You believe that games and role plays are the appropriate methods for learning the principles and concepts in this course. What do you propose to do?
  4. Make a personal plan of how you propose to follow-up the ideas and suggestions in this chapter. Discuss this with one of your colleagues or your teacher/trainer.

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Chapter 5

Self–paced learning

Lann Dawes

Lann Dawes points out in this chapter that self-paced learning is only one factor which contributes to the degree of individualisation of a learning program. Dawes also makes the point that self-paced learning is often equated with competency-based training whereas in fact they can exist independently of each other. This point is important and is discussed earlier in chapter 1 where Gonczi and Hager point out that training can be competency based where nothing more than the establishing of competency standards and assessing some aspects of performance related to the standards, is undertaken.

Nevertheless, self–pacing can be a very useful learning strategy in vocational education and training and particularly in competency based training. The fundamentals of designing self–paced learning units are explained as are some of the problems associated with its implementation. One of the major issues in ensuring success of self–pacing seems to be the availability of learning resources including a variety of media and the existence of computer–assisted and managed learning. However, this should not be taken to suggest that self–pacing is necessarily very expensive since there are considerable savings in introducing it.

One absolute necessity, if self–paced learning is to succeed, is the need to train staff to cope with individual students' needs and to ensure they are not uneasy about the relative ambiguity of the process and the low of control it necessitates. This relates to Scott's earlier point (chapter 2) about the stance of competent vocational educators—a key competency is the ability to accept ambiguity.

In addition, learners need to be inducted into a self-paced learning process. While this is often painful for those used to traditional classrooms, it can form part of a wider strategy to develop the responsible creative critical work force needed for the productive society, argued for in chapter 1.

Current programs of self–paced learning already operating at ICI and UTS show that it is both possible and desirable to have at least some elements of self-pacing in a learning program.

This chapter should be read in conjunction with chapter 5 ,which points to the difficulties of introducing any element of self directed learning —of which self-paced learning is one example.

Introduction

Self-paced learning is quite simply the facility in a learning program which allows learners to work through that program at their own pace. While self-paced learning has been used for many years in Australia in a variety of settings, the commitment of governments to introduce competency–based training by

1993 has lead to an intensification of interest in its advantages and disadvantages. This has been reinforced by computer technology which promises to make self-paced learning easier to implement and administer.

However, there is often a confusion between competency-based training and self-paced learning. Not all self-paced learning programs qualify as competency-based training. There are numerous examples of courses which provide broad aims in place of clearly specified competencies, and reading lists for learners to work through at their own pace in order to satisfy assessment requirements which are norm-referenced instead of criterion-referenced. Nevertheless, self-pacing is a central feature of many highly successful competency-based programs and has gained its position of prominence because of a number of distinct advantages.

The greatest and most obvious advantage is that it caters for the considerable differences in the rates at which people learn. Teachers/trainers often wonder how they can possibly use traditional lecture–based methods in explaining concepts and skills to slow learners while, at the same time, keeping fast learners interested. When attempts are made to pitch the lesson at the middle–level slow learners often become confused or tune out while fast learners become bored. This in turn can lead to behaviour problems. It is a very skilful teacher indeed who can use lecture–based group–paced methods to stimulate all learners to their individual optimal level.

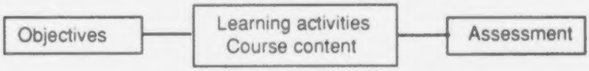
In a number of industrial settings different individual learning rates are not such a problem because training is carried out on a one-to-one basis. Even here, the types of materials developed for self-paced learning programs are advantageous as trainers are freed of the need to be with the trainee for all instruction. Furthermore, people other than qualified trainers can be 'written in' to the learning program to help with valuable learning experiences while the trainer concentrates on other duties.

The present chapter looks at some fundamental considerations in designing and developing self–paced learning programs. It also discusses problems faced by managers of such programs and indicates methods of avoiding or minimising these problems. The role of computers in self-paced learning is outlined, followed by a description of two self-paced learning programs presently in use. One is offered as an option for completing a university subject while the other is a course for training operators in the manufacturing industry. Before beginning this description, however, it is necessary to clarify the relationship between self-paced learning, self-directed learning and individualised instruction.

Individualised instruction, self-directed learning and self-pacing

All learning programs include at least three major elements (see figure 1) and it is possible for learners to contribute to decisions about each of them.

Figure 1 **Three basic elements of learning programs**

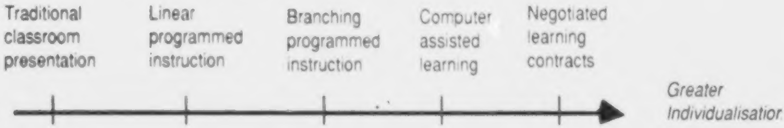

Objectives
Learning activities
Course content
Assessment

The extent to which the learner is involved in making decisions about each of these elements, in part, determines the degree of program individualisation. The final determining factor is self-pacing—the characteristic of the individual learner being allowed to work through the program at his/her own pace.

As programs become more individualised they become more suited to the individual needs of each learner. Increasing individualisation implies greater learner involvement in determining or directing his/her own learning program—that is, it implies greater self-direction. It can be seen, then, that self-direction is directly linked with individualisation and that any program can contain degrees of each. (For a more detailed description of self-directed learning see next chapter) To sum up, self-paced learning is one factor which contributes to the degree of program individualisation and, consequently, to learner self-direction.

Figure 2 illustrates the extent to which some well-known approaches to teaching and learning can be individualised. The approaches referred to are described briefly below in terms of how they accommodate the four factors (objectives, learning activities and content, assessment and self-pacing) that influence degrees of individualisation.

Figure 2 **Method of instruction in order of individualization possible (Adapted from Meyer, Jenkins & Chan, 1978)**


Traditional classroom presentation
Linear programmed instruction
Branching programmed instruction
Computer assisted learning
Negotiated learning contracts
Greater Individualisatior

Traditional classroom presentation

Objectives and content are specified in the syllabus. The teacher selects the subject material, puts it into what he/she considers a logical sequence and decides how each piece of content material will be illustrated and what learning activities will be carried out. The content is 'covered' within the time specified in the timetable. Assessment is either determined by the teacher or by senior members of the school or department. Learners have little or no control over pacing, objectives, learning activities or assessment.

Linear programmed instruction

This is one of the earliest forms of self-paced learning (see Skinner, 1954). Objectives are specified by the program designer with a precise statement of required observable student behaviour, the conditions under which the behaviour must be performed and the required standard of performance. The designer also selects the content of the program, breaks it into small units called frames, and sequences the frames. Assessment is also determined by the designer.

Learners work through the program by completing the activities specified on each frame. They are all required to complete all frames in the same order—although at their own pace—irrespective of each learner's response to each frame.

Quite clearly, the only aspect of individualisation in linear programmed instruction is self-pacing.

Branching programmed instruction

The only difference between the two forms of programmed instruction is that, with branching programs, the learner's response to each frame determines which frame or frames must be attempted next. For example, if learner A responds correctly to a particular frame he/she moves directly to the next main frame. Student B may choose an incorrect response and be directed to a number of intermediate or remedial frames.

In this way branching programs offer some degree of individualisation in progression through the program content and learning activities. Sequence and number of frames to be attempted are based on learner needs as identified by their responses to each frame. However, in many programs the range of potential responses to frames and amount of branching is limited. Individualisation, to a large extent, is determined by the complexity of branching. It is limited by the fact that objectives and assessment are set by the program designer.

Computer–assisted learning

Very complex branching programs can be presented by computer, offering numerous remedial and supplementary branches. Furthermore, learning material can be presented via different formats, e.g. video, animation, text etc. which allows the learner to choose a format that suits his/her learning style.

Consequently, considerable individualisation is possible within the learning activity/content element of a computerised learning program and learning is self-paced. However, objec-tives and assessment are usually determined by the program designer.

For more information on computer-assisted learning see discussion later in this chapter.

Negotiated learning contracts

Using this form of learning the teacher becomes a facilitator or guide and helps the learner to diagnose his/her learning needs as they relate to the aims of the course, to specify the objectives of the contract, to select resources and learning strategies and to specify what evidence will be provided to show the objectives have been achieved (see Knowles, 1973). In other words, each learner and the teacher negotiate objectives, learning activities and assessment to suit each learner's needs.

This method of individualising instruction is discussed in the next chapter.

Fundamentals of program design

Self-paced learning may be used to teach anything from small supplementary or remedial packages up to a whole course. The discussion in this section applies to a body or unit of information that would replace between 20 minutes to around one day's traditional teaching/training time. The way these self-paced units can fit together and be managed is discussed in later sections of the chapter.

The basic features found in most self-paced learning units are discussed immediately below. The reader will quickly become aware that self-paced learning and traditional teaching share a number of fundamentals.

Before the body of the unit

- A title that indicates what the unit will be about (Rowntree 1986). For example, a title such as 'Catalyst Mixing and Storage' gives a clearer idea of what the unit contains than 'Control Room Operator — Module 4'.
- A statement of aim and objectives.
- A list of pre-requisites, i.e. a statement of the knowledge and skills necessary to cope with or make sense of the given unit. This may be stated in terms of other units the learner must complete before attempting the given unit. For example, a unit on writing objectives may be listed as one of the pre-requisites for a unit on self-paced learning. Some units, e.g. programmed instruction packages,

include a test of pre-requisite abilities. Learners must pass this test before attempting the unit.

- A list of contents, e.g. a list of headings which provide an overview of the material to be treated.
- A list of resources the learner can use to work through the unit.
- An explanation of why the knowledge, skills or attitudes presented are important.

The order of presentation of the components listed above will vary according to the requirements of the unit.

The body

In designing the body of the unit it is necessary to carry out the basic steps listed below:

Select and arrange content

As in any form of teaching, the content—i.e. the knowledge, skills and attitudes necessary to achieve the objectives—is selected and broken down into its component parts. These parts are then arranged in logical order. They are the equivalent of traditional lesson steps. The optimum size of the parts depends on the ability and experience of potential learners and the number and type of learning activities to be carried out before the next piece of content is presented. For example, slow learners may cope with a relatively large piece of content if they are given plenty of activities to carry out that provide comprehensive experience with that content.

Select presentation method and learning activities

In response to every piece of content in the program, learners should be given some form of activity to carry out. For example, the simplest and, probably, least imaginative method of presenting factual or conceptual content is to have learners read an information sheet then answer questions. The more creative programmer realises that all the presentation methods and learning activities available to the classroom teacher are also available to the programmer.

Presentation methods include:

- audio-visual aids such as diagrams, photographs, charts, films, videos, tape slide sequences etc.
- verbal illustrations such as anecdotes and analogies
- demonstrations—videotaped or pre-arranged live
- experiments
- simulations, games and role plays
- reference to texts and other materials
- large and small group discussions

- case studies
- visits to museums, factories, laboratories
- discussions with facilitators, support staff, other students and outsiders willing to offer information such as government, community and industry information services which are often available by telephone.

A number of these methods suggest a range of learner activities. A far from exhaustive list is presented below:

- answer questions, fill in blanks, label diagrams
- complete sketches, draw flow-charts
- summarise information using charts, graphs etc.
- carry out experiments and record results
- perform calculations
- identify examples of concepts from a set of examples and non-examples provided
- carry out practical work
- examine samples and report findings
- make judgements based on specified criteria
- summarise information in words

The programmer should also keep in mind the benefits of using more than one presentation method and learning activity for each piece of content. Firstly, learners can choose a method and activity that suits their learning style. Secondly, varied repetition provides practice without boredom. Better retention results when learners may select one, some or all of the methods and activities offered depending on their needs.

Provide feedback

In order to judge if they are ready to move on to the next piece of content, learners need feedback upon completion of each activity. There are obvious logistical advantages in being able to include the feedback in the learning package as opposed to having the learner report to the teacher for feedback.

This is a relatively easy task for those types of activities where only a very limited range of correct responses is possible e.g; those activities listed above from 'answer questions' to 'identify examples of concepts…'. For practical work the teacher may have to become more involved but it may be possible to supply learners with pre-set 'gauges', templates etc. so that they can check their own accuracy for, at least, parts of a job. For activities such as the last three listed above, the designer may provide model answers stressing essential or key elements to be included.

Regular self-tests or revision exercises throughout the program, along with self-marking guides (where possible), also inform learners of how well they have retained or understood the content. Such tests are often included after the presentation of a number of pieces of content. In other cases the learning activities themselves are sufficient.

When regular feedback is provided, learners are far less likely to present themselves for the final assessment before they are ready. This can save considerable staff time in cases where the final test requires the presence of a trainer or teacher.

It is not intended to discuss methods of assessment in this chapter as the same considerations that apply to assessing group-paced learning also apply to self-paced learning.

Try out the unit

It is worthwhile taking the time to run a sample of learners and colleagues through the unit to get feedback about its effectiveness. Modifications can be made on the basis of this initial feedback. Furthermore, on-going learners can be asked to evaluate the unit by filling in an anonymous questionnaire. This need not be handed in immediately upon completion if the learner wishes to avoid recognition

Managing a self-paced learning program

Potential problems of managing programs are sometimes overlooked by enthusiastic designers eager to introduce self-pacing into their courses. Presented below is a list of problems recently reported in relation to self-paced courses offered by the following three institutions:

- Holland College, Prince Edward Island, Canada (Watson 1990)
- Northeast Metro Technical College, Minnesota, USA (Watson 1990)
- TAFE NSW, Metals and Engineering Modules, piloted 1990 (personal communication)

It is emphasised that this is a combined list of problems and that none of the three institutions encountered *all* of the difficulties described.

Problems encountered included:

- Workshop and theory rooms too far apart.
- Student needs neglected because of high student-to-teacher ratio.
- Course presented entirely from booklets with insufficient supplementary resources.
- Not enough equipment in stores when it was needed.
- Testing methods and/or resources inadequate forcing learners to wait instead of moving on with the program.

- Difficulties in maintaining and updating records of students' progress.
- Students unhappy with the system.
- Teachers uncomfortable with the new role.

Watson (1990) contrasts the problems encountered at Holland and Northwest Metro colleges with the relatively successful implementation of self–paced learning at Richmond College of TAFE in Victoria. Three features that he considers contribute to Richmond's success are:

- A variety of media are used to present the course thereby allowing students to select a method consistent with their preferred learning style.
- Computer–assisted learning components with computerised assessment.
- Computer–managed learning

Where computerised assessment is used, tests are automatically scored and recorded. This reduces the testing and administrative load of teachers which, in turn, reduces the number of hold-ups to students' progress through the course.

While acknowledging the current success of the Richmond programs, Watson (1990) follows Bird (1982) in pointing out that some of the instructors appear to be uncomfortable with the changes in the teacher's role which arise when self–paced learning is adopted for a large part of a course. Such discomfort is seen by these authors as a potential threat to the continuing success of the program.

The foregoing discussion points to the need for careful consideration of the following key issues when introducing self–paced learning for a significant part of a course.

- How to facilitate access to materials and resources?
- How to prepare staff and learners for a self–paced learning approach?
- How to assess learners and record results?

The first of these is discussed in the subsection immediately below. Assessment and recording procedures are considered in subsections discussing staff and student preparation.

Facilitating access to resources

Once the programmer is satisfied that sufficient quantities of resource materials are available he/she must establish a system by which students can gain easy access to those materials. Needs will vary from program to program but a number of the following questions will have to be considered:

- What materials should be placed in closed reserve in the library?
- Where will audio-visual materials be stored?
- What procedures must be put in place to enable learners to use A/V equipment?
- If equipment can be moved what borrowing procedures need to be established?
- If equipment is fixed, how does the location of the room in which it is kept affect the rest of the program?
- How many and what types of rooms are required?
- If different rooms are required for different part of the program how important is it that a teacher be present for the various parts? (It must be remembered that students will work through the parts at different times and a teacher cannot be in two places at once).
- What procedures need to be established for the safe use of laboratories or practical rooms?
- What procedures need to be established to facilitate access to tools and materials kept in stores?
- What changes, if any, to the existing system will have to be implemented if satisfactory answers to the above questions are to be found?

Rowntree (1986) points out the need to establish procedures for replenishing stocks as they run low. He also stresses the importance of establishing the responsibilities of teaching and support staff as early as possible. This task may be one of a number to be achieved during the staff orientation program.

Preparing staff

Watson (1990) argues that steps must be taken to ensure teaching staff are adequately prepared for the role of facilitator. On any one day the facilitator must be able to deal with the needs of individual learners who may all be at different stages of the course. In order to cope with the wide range of questions that could emerge on any day he/she must be very confident and competent in the subject matter (The National Center for Research in Vocational Education, 1986). For some teachers this is a far less comfortable role than the conventional one which allows teachers to study up on a single topic just before presenting it.

Some teachers may also feel uneasy over their lack of control as some learners surge ahead while others fall behind. To minimise this problem a staff-orientation program could include experiences which emphasise the wide distribution throughout the population of abilities that relate to their particular area. For example, when trainee teachers are shown samples of the component tests of ability that make up the more comprehensive IQ tests (e.g. Wechsler Adult Intelligence Scale), they often express surprise when they see what proportion of the population has trouble in coping with items the teachers regard as extremely easy. Many are also amazed at how quickly some people can solve difficult problems. This sort of experience emphasises what the range of intellectual abilities means far better than does a simple explanation of the bell-shaped curve. With a greater appreciation of this meaning, teachers can be more tolerant of different learning rates among their students.

Even greater uneasiness can arise when learners claim that they can achieve some objectives more efficiently by working in libraries, laboratories, institutions etc. off-campus. It may be difficult to prevent personal feelings of distrust from distorting a logical consideration of the proposal's merits. Staff need clear guidelines on how to deal with such proposals.

It is important that all teaching staff are familiar with the fundamentals of self-paced learning design even if they will never be required to produce materials themselves. Unless they understand the principles underlying the program their guidance of learners is likely to be below standard.

Obviously, teachers must be comfortable and adept in the use of materials and resources to be employed on the program. For example, the advantages of having computer-assisted and computer-managed learning have already been referred to briefly and will be discussed in greater detail in the next section. However, it is obvious that, even today, a great many valuable teaching staff are not only unfamiliar with computers—they cringe at the thought of having to use one. In fact, it is not uncommon for those people with highly developed interpersonal skills—people who should be of great value in an individualised learning program—to regard themselves as 'people people, not machine people'. Quite clearly it is vitally important to demystify computers for such people and demonstrate the value of computerisation before giving detailed instruction in how to use the system.

Whatever system is used for assessment and recording results it must be well thought out before the course begins and staff well practised in its implementation. Creativity in developing marking guides, templates etc. to speed up marking will help prevent backlogs from choking the system. This is particularly important in areas where computerised assessment is difficult to implement, e.g. in making practical work.

Efficient record–keeping is important in any teaching system. However, when on any one day, learners may complete work from vastly divergent stages of the course, inefficient record–keeping results in chaos. Teachers involved in self–paced learning have to be convinced of this from the outset.

Preparing learners

The National Center for Research in Vocational Education (1986) points out that learners who have experienced only structured group instruction methods need some orientation to individualised instruction. Much of the advice offered applies to the introduction of any self–paced learning program.

Firstly, learners need a clear description of what freedoms, restrictions and responsibilities apply under the new learning system. At Holland College, student acceptance of these conditions is seen as a major determinant of success or failure. 'The critical element for success appears to be the realisation by students that progress only occurs when they do something—that freedom brings an equal amount of responsibility' (Watson 1990, p. 11). This message may be delivered with considerable impact if graduates of the program are available and willing to talk about their experiences with the new group of learners. Teachers may also relate anecdotes or provide statistics to emphasise this point.

Attendance requirements should be clearly outlined. In some courses, e.g. some distance–education courses, teachers and learners never meet in person while in other self-paced learning courses the full-time physical presence of learners at a prescribed location is compulsory. Between these two extremes are the courses in which learners have some freedom to decide when and where to work. The extent of this freedom needs to be clearly defined whether by negotiation or by dictate. It is also important to determine procedures for contacting learners while they are working away from the central location.

Although it sounds contradictory, self–paced learning courses may be subject to time restraints. For example, learners may have to complete all or part of the work by the end of semester or some other prescribed date. This implies that learners who work at a slow pace have to work for more hours to meet the deadline than have quicker learners. Such deadlines are necessary when institutional regulations prescribe dates when marks must be submitted. These deadlines should be agreed upon during orientation and reminders may be needed at regular intervals.

Working through self–paced learning units may require learners to use unfamiliar audio-visual equipment, computers, libraries, and a variety of reference materials. They have to be shown how to use these resources and where to find them. The procedures decided upon for learner use of special purpose rooms (e.g. laboratories, practical rooms) and for accessing stores and equipment have to be explained and demonstrated.

The role of the teacher in the system should be explained to learners. They need the answers to such questions as:

- What guidance and assistance will teachers provide?
- Will the self-instructional material be supplemented with lectures or demonstrations?
- When and where will teachers be available?
- How and when can teachers be contacted outside normal hours?

Learners may also need guidance in designing procedures for helping each other. Discussion may focus on such questions as:

- In what parts of the course is help from others essential, encouraged, discouraged or prohibited?
- When will group discussions be useful and how can they be arranged?
- How can learners get together at mutually convenient times to carry out role-plays or simulations when these activities are appropriate?

Assessment requirements are a major concern for learners when beginning any course. When the learning system is new and unfamiliar, learner anxiety over assessment can be quite intense. This increases the importance of clearly explaining the assessment requirements when introducing self-paced learning.

Learners need to know:

- What methods of assessment will be used?
- What equipment will be used in carrying out assessment?
- What training will be provided to enable learners to use the equipment?
- What arrangements they have to make in order to be assessed?

As the complexity of the assessment system increases so does the need to provide a comprehensive written outline of requirements. Examples of the various assessment methods and marking guides help to clarify the picture. The orientation program should provide learners with the opportunity to practice working through samples of assessment types using all the necessary equipment.

Computer-based training (CBT)

This term simply refers to the use of computer technology in a training system. In such a system computers can serve two major functions. They can be used to deliver the learning activities and tests to the learner. This function is referred to as computer assisted or Computer Aided Instruction/Learning/Training/Education. Computers can also be used for program management. Administration details such as enrolments, finances, attendance etc. can be stored and updated as can student performance data. This management function can also be used to guide students through the program of activities. It is referred to as Computer Managed Instruction/Learning/Training/Education.

The derivation of the various acronyms used to describe the functions of CBT should be obvious from the above discussion. Instruction/learning etc. is either assisted/aided or managed by computer, hence such abbreviations as CAL, CAI, CML, etc. The two major functions are discussed below under the terms computer–assisted learning (CAL) and computer–managed learning (CML).

Computer-assisted learning (CAL)

As with any good self–paced learning system a prime feature of CAL is the interaction between learner and learning material. The most common form of interaction occurs when the learner responds actively to the material presented, e.g. the computer presents information then poses a question to test the learner's memory or understanding.

The computer then provides feedback about the accuracy of the learner's response which may determine the further sequence of program presentation. Computerised programs can provide quite complex branching sequences (See section on branching programs). Not only can remedial and supplementary branches be included but information can be repeated in another format, e.g. using animation with speech synthesis or video in place of text and graphics. In this way different learning styles as well as different learning rates can be catered for. Other formats available include video-disc, audio and music.

It is also possible to develop course-ware that allows the learner to initiate interaction by asking questions. However, Sims (1991) points out that unless this form of interaction is used in a restricted form the programmer faces a tough task in identifying all the words and phrases the learner may enter.

Sims (1991) describes the teaching strategies or presentation options available under CAL. They are listed as follows:

Instructional games	The enormous variety of video games can be adapted for educational purposes and included in CAL programs. Card games, board games, quizzes and word games are just some examples of the range of these entertaining and, consequently, motivating teaching strategies.
Drill and practice	This presentation option is designed to provide practice with newly acquired concepts. In order to maintain motivation the repetition involved can be varied by using different formats or including games.
Tutorial	This is the most commonly-used option. It involves presenting information and having learners actively respond. For example, they may have to answer questions about the information, represent the material in another form (e.g. word form to graphical representation), perform a calculation, summarise, label diagrams, complete sketches etc. Feedback is provided after each response. Different formats and branching can be included to cater for individual needs.
Discovery	Instead of presenting information to learners, they may be asked to discover or identify critical elements in a given scenario, e.g. to identify potential safety hazards in a graphical representation of a workshop. Learners may also be encouraged to explore relationships between elements in a given situation or set of data, e.g. to determine the relationship between the diameter and circumference of a circle. CAL is well suited to guiding discovery because of its variety of format options and ability to provide instant feedback.
Simulation	Simulations provide the opportunity to develop skills safely in an environment that approximates or imitates a real–world situation where risks may be involved. For example, computerised simulated control panels have been developed and programmed to allow learners to practice complex operating procedures in safety. Learners can find out of themselves the consequences of numerous combinations of behaviours without risking inquiry to themselves, damage to equipment or loss of production.
Assessment	It can be argued that assessment is part of the CML function but it has been included here in following Sims (1991). Computers can be used to present tests, automatically score them, record the scores, produce various statistics on student performance and progress, and analyse test items. This takes an enormous load from the teacher who can then devote more time to such activities as one-to-one assistance or marking

tests that are difficult to score by computer, e.g. practical tests, essays etc. More will be said about the assessment function of computers in the section on CML.

Integrated

All the options described above may be included in any one program. Furthermore, learning activities that take place away from the computer may be integrated with the computerised options. For example, learners may go to a laboratory and carry out an experiment, they may examine samples of materials, soils, plants etc., view a film, conduct a survey or carry out any number of possible external activities then record their findings, predictions, evaluations etc. as part of the computerised program.

Computer - managed learning (CML)

Sims (1991) identifies three major factors associated with CML.

Administration

Records of enrolment, attendance, rosters, registrations and learners' personal details (name, address, phone numbers etc.) can be stored along with financial data such as fees paid or owing.

The trainer may send messages through the system to individual learners or to groups of learners who may also send messages back. This facility can be most useful in training situations where trainer and learner do not have daily face-to-face contact.

Results

The value of having test results automatically scored and recorded has already been mentioned. In addition to this function some CML packages can provide an analysis of item difficulty, item discrimination and responses to questions. Overall completion rates and learner mastery levels can be provided. These data, along with information about remedial paths taken by learners, are valuable in evaluating program materials, tests and activities.

Learners can be given immediate feedback about their performance on a computerised test and can, if they wish, compare their performance with that of all other learners. They can, at any time, check their own progress through the course by referring to a map indicating which course components they have completed and which ones are incomplete. These facilities can have a motivating effect.

Results from non-computerised tests can be entered manually by staff.

Prescription

The CML function can advise the learner on what to do next after completing an activity. The computer guides the learner on the basis of his/her performance on the newly completed activity. Other CAL activities or external sources of learning may be recommended.

Some programs currently operating

ICI Botany, operator-training program

ICI Botany decided to introduce a self–paced learning system by which new operators could be trained for the job and existing operators could upgrade their level of skill. The system described here is that of the polythene plant although it varies only in minor details from the system used by the other eight plants.

The description begins with an explanation of how course objectives were developed from the job analysis. The training system is then explained as the various resources are outlined. These include the operator reference manuals, training modules, assessment modules, resources person, training co-ordinator and plant equipment.

Job analysis and objectives

A job analysis was conducted as part of an award agreement for operators. The knowledge and skills agreed upon were a rationalisation of existing duties. It consisted of statements of what operators had to know about various equipment areas and what tasks and operations they had to perform using that equipment.

These statements were not always expressed in terms of observable operator behaviour and in other instances were not specific enough to be used as training objectives. For example, under the heading of 'Extruders' one of the job analysis statements was 'Basic knowledge of equipment'. This was rewritten as the following objectives:

- Identify in situ the major components in the extrusion process.
- Explain the purpose of each component.
- State the differences between each of the extruder systems.

Once the objectives were written, work began on the development of a number of resources which are described below.

Resources

Operator reference manuals (ORM)

Some eighty major components or sub-systems make up the polythene production and finishing process.

These include such sub-systems as the primary compressors, secondary compressors, reaction, extrusion etc.

Each of these is described in an ORM. Each ORM contains an explanation of the purpose of the sub-system, an overview with flowcharts and diagrams of how it fits together, a detailed description with diagrams of its component parts and a 'Procedures' section with details of how to operate the sub-system.

The procedures section is divided into procedures, tasks, operations and key points. For example, in the extrusion ORM, procedure 2 is 'Cold extruder start-up'. The second task is to heat up the cold extruder. The operations or steps involved in doing this include setting the turbine head to specified temperature, setting the die heater, and maintaining that temperature for a specified time before proceeding. The key points are the important considerations associated with each operation. These include safety precautions, reasons for the operation, cues to look for when carrying it out and how to rectify mistakes (Field, 1984). Tasks, operations and key points are presented in a three-column format headed by the particular procedure.

ORMs are grouped together according to the work area/job of the operators primarily responsible for those sub-systems. For example, there are 14 ORMs that relate to the reaction–vessel shiftman's area of responsibility. They are grouped together as Book 1 of ORMs and a set is kept in the control room which is the centre of the Shiftman's duties. Other 'books' of ORMs are kept in places convenient for the operators responsible for those groups of sub-systems. Consequently, ORMs can be used as a handy reference for operators on the job as well as serving the function of a textbook for trainee operators.

Training modules

Operators can train for 11 different work areas/jobs at the core or advanced level making a total of 22 jobs. For each job a training module has been written or is presently being written.

Training modules are broken into sections based on plant sub-systems. However, the first section of each job's training module contains activities that provide an overview of the job and an understanding of how the relevant sub-systems fit together and contribute to the overall polythene production process. The remaining sections are made up of activities designed to provide the knowledge and skills necessary to operate each sub-system. As a minimum each section contains activities relating to the purpose of the sub-system, safety issues, location and identification of equipment, and 'hands-on' operating procedures.

Varied repetition is provided to consolidate information and to some extent, to cater for the different learning styles of trainee operators. For example, the activities below are included in section 1 of the extrusion operator module to enable operators to achieve the following objectives:

- *Locate and identify the components of each extrusion system.*
- *State the purpose of each component.*
- *Identify the differences between the systems.*

Activities (extrusion operator module–Section 1)

- *Use the ORM to complete a flow-chart of the basic extrusion process and state the purpose of each component.*
- *Using the ORM and set of photographs provided, identify the photograph of each component of the Extruder No. 3 system. Then place the photographs in the order representing the flow-chart.*
- *Use the map and ORM to identify each component in its actual place on the plant. Note the identification number of each component for verification.*
- *Using map, ORM and schematic diagram locate on the plant the components of the Extruder No. 4 system. Write the identification number of each on the blank-space schematic diagram.*
- *Using ORM note the differences between extruder systems 3 and 4.*[66]
- *Repeat the last two activities for Extruder No. 1 and 2 systems.*

Answers for each activity are provided on the page following it. These are checked before moving on to the next activity.

In completing the above activities, trainees actively respond to different abstract representations of the systems and then to the actual components. Similarities in the systems provide repetition to consolidate learning while differences between the systems are emphasised.

Throughout the modules material is presented in different forms and activities require trainees to translate material from one form to another. For example, blank-space summaries are completed using ORMs as a text, retention of that summary is consolidated by completion of a flow-chart, diagrams are labelled, tables are completed from information in written text, and cross-word puzzles are used for revision.

To learn lengthy procedures or tasks, trainees are first asked to read the ORM and make a summary of the operations and safety issues on a pocket-sized card. Then they arrange to watch a skilled operator carry out the task on the job and note any differences from their summary. After this the resource person talks the trainee through the task and at a later date the trainee carries out the task under close supervision. Between practices trainees are encouraged to reflect on their performances using the pocket summary as a guide.

It is left to trainees to decide which and how many of the activities they need to complete. When trainees are confident that they can achieve the objectives of the module section they can ask to be assessed.

Assessment modules

Assessment consists of a number of short oral questions to test cognitive objectives as well as performance tests to see if trainees have mastered the operations. All questions and performance tests are included in the assessment module booklets. Testing is carried out by a panel of three markers who record the results on computer. Trainees who fail to demonstrate competence on the section test may apply to be re-tested at a later date.

The use of oral questioning instead of computerised testing was the result of strongly expressed operator preference. However, a bank of computer questions is being developed to demonstrate the advantages of computerised testing. It is expected that as the number of operators requiring testing increases, these advantages will be appreciated more fully. It should be pointed out that on other plants where operators use computers as part of their job, the testing of cognitive objectives is fully computerised.

Resource person

The resource person is an operator with expertise in a particular job who agrees to become involved in training. His/her main responsibilities are to demonstrate operations, supervise trainee practice and to answer trainees' questions. He/she is not expected to have any expertise in training so the training module activities are written with this in mind. However, until all resource people are given some training in the skills of demonstrating and supervising trainee practice, their possible lack of training skills will remain a potential problem.

Training co-ordinator

The training co-ordinator is an ex-foreman with extensive experience and plant-wide expertise. He is involved in writing ORMs and training and assessment modules. He is also responsible for nominating, co-ordinating and the orientation of resource people and marker panels, for allocating all written materials and for recording test results on computer.

The training co-ordinator also manages revisions of all written materials. This is an important function as it is not uncommon for new equipment to be added to the plant, old equipment removed and sub-systems modified. When this occurs changes must be made to all associated written resources including ORMs which are kept in various locations across the plant.

Plant equipment

A strength of on-the-job training is that operators learn on the actual equipment they will be required to use. On the other hand, it is not always possible for a trainee to practise an operation whenever he/she wants to because the necessary equipment is often on-line producing polythene. Since production cannot be interrupted, the trainee must go on with other work until a suitable opportunity occurs.

Teaching skills course for vocational teachers at UTS

The Graduate Diploma of Education (Technical) is an in-service course designed for the initial training of full-time TAFE teachers in NSW. The subject 'Theory and Practice of Teaching 1' is one of a number of subjects studied in the first semester of this one year course. Approximately half of the course's scheduled attendance hours are allocated to this subject.

In order to pass Theory and Practice of Teaching 1 learners must:

- demonstrate proficiency in a number of core and elective competencies then combine those competencies to present effective lessons;
- compile a journal in which they reflect on their teaching experience;
- participate in the activities of the 'integrated modules' in which psychological, philosophical and sociological aspects of the course are discussed.

Most course time is devoted to the first component listed and learners are offered the option of a self-paced or grouped-paced mode of delivery for this section of the subject.

The self-paced mode has been introduced because every year a number of those enrolling bring with them considerable part-time teaching experience, some having completed short courses on basic teaching methods. Such learners are likely to feel frustrated or bored with a group pace determined by the needs of other learners with little or no teaching experience. The self-paced option allows the more experienced learners to work through the basic competencies quickly, leaving them time to explore areas of special relevance to their particular teaching situation.

Self-paced learners are also allowed to complete the competencies in any order they wish. For example, one learner developed a self-paced computer assisted lesson as her first assignment. Clearly, this was not a basic core competency but she chose it because it was relevant to her immediate teaching needs.

Program development

A number of meetings of teaching staff were arranged at which specific objectives from the existing Theory and Practice of Teaching syllabus were grouped together to form competencies. Agreement was then reached about which would be compulsory core competencies and which would be listed as optional electives. It was also agreed that elective choices would not be limited to those on the existing list, i.e. learners would be able to suggest further options.

Resources

Resources such as books, videos and films were identified and listed for each core–competency area. This was relatively easy task for staff experienced in teaching the subject.

Multiple copies were already available in the library of a series of modules specifically designed for the training of vocational teachers (The Center for Vocational Education, 1975, The National Center for Research in Vocational Education, 1982 - 1990). These were developed in USA but were generally found to be effective as resource material in a study of performance–based teacher education for TAFE teachers in Australia (Hobart and Harris 1980). For the present Dip. Ed. students these modules are used primarily as sources of information. It is left to the learner to decide which, if any, of the modules' exercises he/she carries out. Each semester, copies of these modules are placed in closed reserve in the library. Multiple copies are also available for loan from a teaching staff member responsible for a self–paced group.

A learners' guide is issued which includes:

- an outline of the course listing the competency areas and specific objectives associated with each;
- a brief explanation of how the self–paced and group-paced options operate;
- a set of suggested assignments, each with a list of resources, for each of the core competency areas.

Most suggested assignments contain a performance component which requires learners to demonstrate a teaching skill, e.g. introduce a lesson. There is also an essay component in which learners must provide evidence of wider understanding of the skill than can be demonstrated by a single application of it. Learners may combine the assignments or negotiate different assignments with their group advisor—the staff member facilitating their learning in this subject.

Micro-teaching rooms are booked for the semester for each group. These rooms contain video cameras and play-back monitors so that learners can practise their competencies then see themselves in action on the replay. When satisfied with their performance, learners can submit the video as evidence that they can carry out the particular teaching skill. Portapaks can be borrowed when learners require video equipment outside the hours for which video rooms are booked. Blank videos are issued by, and returned to, group advisers.

The main human resources include the group adviser and fellow learners. Learners are encouraged to discuss teaching-related issues with each other by a number of means. Each week they come together for at least one hour to discuss topics of concern. Guest speakers are sometimes invited to this meeting and at other times members of the group with special areas of expertise lead discussions. For example, in the first semester of 1991, group members led sessions on teaching creative subjects, teaching partially sighted learners and teaching learners with neurological disorders.

At this weekly meeting administrative matters can be attended to and learners can find out which of their peers are currently working on the same competencies as they are. On the basis of this information they often form small informal discussion groups and micro-teaching groups.

Small groups also meet with the advisor to discuss their journal activities. The points raised in these groups often create lively discussion and force all participants to think deeply about their ideas.

From the above discussion it should be obvious that the self-paced option does not condemn the learner to a lonely, antisocial existence. On the contrary, learners work together and, to date, have formed quite cohesive groups that continue to meet outside scheduled hours.

The group advisor is available for one-to-one or small group discussions. A wide range of issues is raised including follow-up discussion of written comments on assignments, strategies for upcoming lessons, ideas for elective competency assignments and guidance on additional resources.

The advisor also visits the TAFE colleges to see each learner teach his/her own classes. After the lesson the adviser and trainee teacher discuss strengths and weaknesses of the teaching performance. Trainees also use these visits to demonstrate competence in a number of teaching skills and to show that they can combine those skills to present effective lessons.

Staff orientation

No formal orientation is provided for staff advising self-paced groups. Those in this position are experienced in teaching Theory and Practice of Teaching and have taught subject units on the design and implementation of self-paced learning. They are volunteers who are already convinced of the value of offering a self-paced option for this subject.

Learner orientation

A learner orientation is vital. Learners are placed in temporary groups for the first week of the course. Those with considerable teaching experience are placed in self-paced groups. During the first week they are given the learner guides and discuss course requirements and the self-paced system with their advisors. They also begin their first assignment which provides first-hand experience with the system and the resources. Most of the first week is devoted to Theory and Practice of Teaching so they have extra time to learn to use the resources effectively. At the end of the week they must decide whether to continue with a self-paced group or join a group-paced group.

Assessment and record keeping

Marking the essay and performance components of competency assignments requires a high degree of informed judgement stemming from the fact that a wide range of essay answers and trainee teacher behaviours can provide evidence of competence for most of the teaching skills assessed. Clearly, it would be very difficult to computerise testing procedures so marking is carried out by the advisor.

Fortunately, group sizes never exceed 25 so the marking load is manageable. Written assignments are marked and returned with written comments within a week of submission. Videos are viewed and written comments provided within the same time-frame. Adviser comments on actual lessons in TAFE colleges are usually provided immediately after the lesson.

A chart of learner names and competency areas is used to keep track of learner progress. It is simply a matter of ticking the box as each learner satisfies the requirements of each essay and performance component of each competency.

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Chapter 6

Self–directed learning

Griff Foley

Self-directed learning has been a touchstone of adult educators for the past twenty years. In this chapter, Griff Foley discusses some of the difficulties associated with self-directed (or as Foley prefers, participant-directed) learning. He discusses both the concept itself and the ways of implementing it. He argues that those advocating self–directed learning in formal institutions too often ignore the individual psychological factors that influence the behaviour of both teachers and learners. The constraints imposed on self–direction by institutional and wider societal realities are also raised.

Nevertheless, he strongly supports the need to move control in vocational classrooms away from teachers towards learners. It is implicit in this chapter that this will lead to students taking greater responsibility for their own learning (and their lives more generally). Relating this idea to the broader theme of this book, the capacity for self-directed learning is a prerequisite for developing the 'clever' workforce Australian needs in the 1990s. The process of developing self-directed learners is, however, a complex one. A great deal of thought needs to go into how learners can be oriented towards participant–directed learning, given the constraints and pressures on individual action. The use of learning contracts is a key strategy implementing participant–directed learning but care needs to be taken in outlining assessment requirements and students should be given examples of what they might be expected to achieve. Finally, teachers need to think through their own roles: be prepared to be challenged, be aware of the pressure to become too supportive and to think of ways of extending students. In this, Foley's points parallel the challenges suggested in Scott's chapter 2—concerning both the questions of stance and of criteria for evaluating success of learning.

This chapter is an important prelude to reading chapters 7 and 9 in particular—arguing as they do for non-traditional learning in which control is passed, to differing extents, to the learner.

Introduction

During the past twenty years, in the U.S., England and Australia, self-directed learning has become a major area of interest in adult education. Self-directed learning (SDL) involves learners, individually or/and in collaboration with other learners, in formal education and informally, in taking control of their learning. To so define SDL points to three central issues:

Why the interest in SDL?
What is involved in doing SDL?
Is SDL an effective form of learning?

This chapter will address these questions, in relation to learning in groups in formal education. The issue of individual self-direction in learning, or self-paced learning, was dealt with in the previous chapter.

Why the interest in self-directed learning?

The interest in SDL arises from a complicated mixture of social and educational factors, which can only be discussed superficially here. After World War 2, in the U.S. and to a lesser extent in Australia and England, there was a massive research effort to identify the characteristics of effective teaching. The findings were pessimistic. In a review of the research, Biddle and Dunkin (1987, 121) conclude that 'most studies of teaching effects provide little evidence that the effect in question was produced by teaching and not some other causative factor'. In the 1960s and 1970s, in adult education, and to some extent in school education, the attention of researchers and practitioners moved from trying to develop more effective teachers to trying to produce more competent learners. In part this was because of the failure of the teacher–effectiveness approach. But other factors were also important.

In the 1960s and 1970s there was a sustained and multifaceted critique of didactic teaching, which was part of a broader critique of education and society. In scholarship and polemic it was argued that teacher-centred education, in all sorts of subtle ways, bred passivity, alienation and resistance, and helped to reproduce oppressive class, gender and race relations. (For surveys of this material see Foley 1991, and Wright 1990.) This sociological critique coincided with other research, to bring about a major change in the way educators looked at learning and teaching. Cognitive psychologists like Piaget (1973), Kolb (1984), Perry (1920) and Kohlberg (1976), showed that learners have different learning styles, and that over time, many people move to greater autonomy in their learning and behaviour. Carl Rogers (1969), and other humanistic psychologists and educators, argued that because individuals are unique, the only significant learning was 'self-discovered truth that has been personally appropriated and assimilated in experience'. Such learning, Rogers argued, could not be taught directly, it could only be facilitated, i.e. educators could create the conditions for such learning to take place.

The idea of learning being facilitated rather than taught has been linked in adult education theory and practice to the notion of adults directing their own learning, rather than having it directed by teachers. American data from the 1970s suggests that more than two-thirds of total adult-learning efforts are self-directed (Brookfield 1986, 150). Research conducted by the Canadian adult educator Alan Tough (1967, 1968, 1979) found that adults spent around 700 hours each year on 'learning projects', systematic learning activities planned and conducted by the adults themselves. There is also a long tradition of autonomous adult learning, stretching back to working class auto-didactics (i.e. self-taught people) and beyond (Thompson 1968: Johnson 1979).

Tough's findings have been supported by numerous studies of, mainly middle class, learners, in a range of occupations (Brookfield 1986, 149). This research, together with the psychological, and sociological research already referred to, and the adult education profession's desire to stake out a distinctive territory (Harris 1989, 103), led to self-directed learning becoming a major area of interest in adult education in the 1970s and 1980s. For many educators, self-direction came to be seen as an inherent cognitive and/or personality characteristic, the emergence of which was to be facilitated by the adult educator, through a process which Knowles (1978, 1984) popularised as andragogy. (For critiques of Knowles' notion of andragogy, see Bright, 51-55, Tennant, 144–146, and Brookfield 1986, 90–102). Instruments were developed which purported to measure the readiness of people to undertake self-directed learning (Harris 1989, 106). To date, research on the characteristics of self-directed learners has told us little (Harris 1989, 109), and the validity of measurements of readiness for self-directed learning has been questioned (Field 1989).

Despite these doubts, the commitment of many adult educators to the notion of self-directed learning remains strong. There is now a large literature on the theory and practice of self-directed learning. Brookfield (1985, 1986, 40-89) surveys this literature; the contributors in Boud (1988) discuss the complexities of doing self-directed learning (see in particular the chapters by Ferrier et al. Stephenson & Bawden). For me, the most interesting question about self-directed learning is: how can teachers devise ways of giving students greater control over their learning? The rest of this chapter will explore this question.

What is involved in doing self-directed learning?

This section will deal with four aspects of the practice of self-directed learning in formal education: course structure, student orientation, learning contracts, and the role of the teacher.

Course structure

It is useful to think of the designing and teaching of courses as a continuum. At one end course designers make judgements about what learners need to know. The content of the course is then set down and various methods used to transmit the content to students. At the end of the course the students are evaluated to determine how well they have absorbed the content. In the second approach, course builders start by helping students to identify their learning needs, which they then work on, with the assistance of teachers. There is no prescribed content that teachers feel must be transmitted to students. The content of the course, and the way content is learned, is determined by the needs and interests of all the participants, including the teacher. What students get out of the course is evaluated by measuring the extent to which students have attained their learning objectives.

Teacher direction ______________________ Student direction

In this chapter we are discussing the student direction end of the continuum, with the following qualification. In courses in Australian educational institutions much of the content is prescribed, by the curriculum and/or by the requirements of a profession or trade. So when we talk about self-direction in formal education we are generally referring to student control over how they will learn, rather than over what they will learn. That said, the broad statements of competence that constitute the curriculum of many trade and professional courses allow students a measure of choice as to the precise content of their training.

When course structure is examined from the perspective of who controls learning, and commitment is made to increase student control of learning, attention focusses on how this can be achieved across different learning experiences. Within a trade or professional course it is common to find the following six types of learning experience: demonstrations/lectures, practicals/workshops, tutorials/seminars, field experiences, one-to-one staff/student consultation, and individual students' work. Each of these learning experiences can be designed in ways which enable students to take greater responsibility for their learning than is normally the case in institutionalised education.

In an interesting paper, Finkel and Monk (1983) make the point that most teachers and students see education as being essentially a two-person relationship, in which the teacher tries to reach each student individually, no matter what the size of the learning group. This perception of teaching leads teachers to assume full responsibility for all that goes on. They supply motivation, insight, clear explanations, even intellectual curiosity'. Like Atlas, such teachers feel they have to carry on their shoulders the whole enterprise of learning and teaching.

To see teaching in this way, Finkel and Monk suggest, is to be trapped in a very narrow conception of the teacher's role. They suggest that, instead, teaching should be seen as a series of functions, for example, transmitting information, asking questions, giving interpretations, supporting students and assessing students' work. While seeing classroom activity in terms of roles ties behaviour to people (teachers, students), seeing it in terms of functions links behaviour to tasks, many of which can be carried out just as well by students as by teachers.

To foster student-directed learning the teacher can deliberately redistribute teaching functions so that at least some are performed by students. This sort of redistribution can occur across all of the six types of learning experience referred to above. For example, a theory lecture delivered by a teacher, can be replaced by a reading or worksheet, read before the class by students and discussed in small groups in class. Some instructional, support and assessment functions in practical workshop sessions, usually performed inadequately by harassed teachers in over-large classes, can be carried out by students working in small 'peer–teaching' groups. Classroom and on-the-job learning can be linked through a process in which students keep a journal of their workplace learning and discuss their reflections in small groups, in class.

Orienting students to self–directed learning

Most of us have had most of our formal learning structured for us by teachers, and so find it disorienting if we are suddenly asked to direct our own learning. Taylor (1987, 184–5), in a study of a self-directed post-graduate course in adult education, found that in the early part of the course learners were confused, anxious, tense, lost confidence, withdrew from others, blamed others and blamed themselves. The source of this disorientation lies in two, related, factors: the very different nature of self-directed learning, and the dynamics of learning groups. In self-directed learning, students have to, for example, accept greater responsibility for finding and integrating knowledge. As a student doing a self-directed graduate medical education program at McMaster University in Canada put it:

> *In the lecture system which I had been used to as an undergraduate, I had been accustomed to reading relevant material quickly before each lecture, and having the identifying and sorting out of what was essential done by the lecturer. Now I spend much more time on reading about a topic. I re-read several times and underline, before I can be sure that I have isolated all the important concepts… Each student works independently to some extent, but our tutorial groups are crucial*

> *to us for checking that our concepts are accurate. As an example, in my present group we posed the question of which two laboratory tests are the most important in the initial diagnosis of diabetes. All the group members researched the same perceptions of which considerations were relevant in answering the question. A very lively hour of information exchange, challenge and rethinking was necessary, before all the group members had agreed on the answer and on the qualifying statements attached to it. This kind of exchange is most fruitful when the question of what information is essential is raised, when the information and the concepts generated are confirmed and when individuals' contributions are integrated and augmented... From my undergraduate education, I was also used to being introduced to new subjects by lecturers. I did not have to worry about defining the dimensions of the subject or identifying a starting point. Now I have to be prepared to start alone on any appropriate new subject. The approach which I have used and which took me until the end of Phase II (of the program) to get comfortable with, is to ask simple questions, one at a time, at the start. The questions gradually get more complex as the framework of a concept is built up and then filled in. This takes time and a lot of patience, when the urge is to find out everything at once. It suits my style to get some knowledge of the anatomy of the relevant area or organ as a starting point. This provides me with visual references for further information.* (Ferrier et al. 1987, 164)

Another dimension of the transition from teacher-directed to self-directed learning relates to the dynamics of learning groups. There is general agreement among researchers that groups move through three stages: an initial stage, characterised by dependence on the leader and reliance on familiar ways of operating carried over from outside the group; a middle phase, marked by power struggles, task orientation and a feeling of relatedness to the group; and a terminal stage, in which members move closer to one another and become concerned with matters arising from the impending termination of the group (Aiello 1973; Bennis and Shepherd 1956; Bion 1961; Bradford 1964; Dunphy 1968; Rogers 1973; Schutz 1966; Smith 1972; Tuckman 1965).

From the facilitator's point of view, the two most important aspects of the early stage are the members' paradoxical dependence on, and resistance to, the group leader. All students of the group process agree that at the beginning of a new group members see themselves as dependent on the leader. Explanations of this dependence vary. Some writers interpret it in psychoanalytic terms as the desire of the group member to continue to remain a passive and dependent child.

Just as the infant expects complete acceptance by the mother, so in the initial group stage the client or learner expects total acceptance from the therapist or teacher (Arensberg 1973, 163). Initial dependence can also be seen to be a function of group members' socialisation. In our society, most learning situations involve teachers transmitting their expertise to learners. In any learning situation, the learner will see himself or herself as dependent on the teacher, especially in the initial stages of a new learning experience when the learner is finding out what is expected of him or her.

Participants' initial dependence on group leaders generates resistance. In the psychoanalytical explanation the resistance is stimulated by the leader failing to uphold the participants' view of themselves as perfect. The group leader, far from accepting the participants' view of themselves, tries to get them to change their behaviour in some way. Feeling betrayed, the participants unleash their hostility on the leader (Arensberg 1973, 163). In sociological terms, resistance to the non-directive leader is easily explained. Participants are used to a directive style of group leadership. The non-directive style leaves them confused and frustrated. Their response is usually to call for direction from the facilitator. If that direction is not forthcoming, the group will become antagonistic towards the leader, or will project its hostility onto some of its own members. At this point, the group can become destructive and negative. If membership is voluntary, some members will withdraw. If attendance is compulsory, many group members will do a minimum amount of work and will feel considerable resentment towards the group leader. The atmosphere of the group may become sour and apathetic. At the very least, a lot of airing of grievances will go on.

It is vital to effective learning in participant-directed groups that the issue of who directs whose learning be dealt with decisively in the initial stage. There are two ways that I know for dealing with this issue. One is for the facilitator initially to provide familiar structure for participants, and then to take the group carefully through a process by which the leader-imposed structure is removed and participants build their own structure. The other way is to tackle the issue of self-direction from the first session. Which approach one adopts depends upon one's teaching style and upon the nature of the groups with which one is working. A therapist working with people who are attending a group by choice is obviously in a better position to immediately confront issues of responsibility and control in self-direction than is the teacher who is working with students who have to be there. My experience with learning groups has convinced me of the importance of moving in a clearly structured way from teacher-direction to participant-direction.

In teaching TAFE teachers and other adult educators in undergraduate and post-graduate professional development courses, I have tried to devise a systematic process for moving from teacher-direction to self-direction. In the initial weeks of a course, students' attention is focused on seven questions:

- Why does the course exist?
- Why should I do it?
- What is in the course?
- How will I do the course and, who does what, with and for whom, in the course?
- Why is self-directed learning important?
- What exactly does self-directed learning mean for students in this course?
- How will I organise my learning in this course?

These issues are addressed in an orientation booklet (see e.g. Foley, 1989) which students receive as they enrol in the course, and are discussed at length in class sessions. Students also receive a booklet entitled Study *skills for self–directed learning* (Foley 1991) which contains detailed information about the university library (including titles and shelf locations of a wide range of journals), details of first–semester assignments, sample assignments, and readings on stress management and on giving and receiving feedback in small group learning.

Learning contracts

From semester 2 onwards, in the courses in which I teach, set assignments are replaced by learning contracts. In the students' orientation booklet, learning contracts are explained in the following way:

> The major means of organising participants' learning in this course is the learning contact. Learning contracts are simply a systematic way of organising learning which follows the four step process referred to above. In this course students negotiate learning contracts with their seminar leaders or tutors. When you draft a learning contract you are addressing the following questions:
>
> *What are you going to learn?*
> (What are your learning goals or objectives for this contract?)
>
> *How are you going to learn?*
> (What strategies and resources will you use?)
>
> *What will you produce?*
> (What will be the final product of your learning?)

> *How will you know what you have learned?*
> (How will your work be evaluated; by what criteria will it be evaluated? Who will evaluate it?)
>
> A sample learning contract is attached (Appendix 2). You will notice that the objectives, strategies and evaluation criteria are all specific and clear. Being systematic, specific and clear are the keys to writing (and negotiating) useful learning contracts.
>
> Since we all have so much we want to learn, we need to be selective because we are never going to learn all that we want on one topic or within one competency area. The learning contract assists you to choose what it is that you most need to learn at this time and it provides the means for going about learning it.
>
> Writing and doing learning contracts is a learned skill. For this reason the first three learning contracts will be set for you in general terms. The first two contracts will be distributed next week and discussed in tutorials. From Semester 2, you will be able to design all your own learning contracts in consultation with your tutors and seminar leaders.
>
> Details of assessment procedures and requirements for learning contracts are outlined on pp. 11 and 12 below (Foley 1989).

This process of spelling out exactly what contract learning involves is an essential part of the transition from teacher-direction to self-direction in learning. But providing this detail does not solve all problems with contract learning. I will return to this issue below.

The role of the teacher in self–directed learning

Self–directed learning is sometimes pictured as a cop-out for teachers, as a way of reducing teachers' workloads and their responsibility for students' learning. Properly done, self-directed learning means more, not less, work for the teacher.

The role of the teacher broadens, from being primarily a transmitter of subject content, to include at least the following functions (see Shor 1980):

- learning group convener
- facilitator of learning, in groups and one-to-one
- recorder of information and perspectives
- mediator between individuals, including advocate of missing perspectives, and adversary of oppressive behaviour
- provider of learning resources
- clearing-house for learning resources provided by students
- lecturer

The great advantage of self-directed learning for teachers is that enables them to step out of the narrow role of information–giver and authority figure and adopt broader and more creative functions.

Is self-directed learning effective?

Asking this question gives rise to a number of issues, five of which will be discussed here.

Student learning and satisfaction

There appears to be no evidence to show that courses organised in accordance with principles of self–direction produce more competent professionals and tradespeople than do conventional teacher-directed courses (Brookfield 1985, Candy 1987, 1988). However, it does seem that students doing self-directed courses are more satisfied with their learning than students' in teacher-directed courses. In particular, it appears that the experience of directing their own learning affirms students sense of autonomy and self-worth, and validates their ways of making meaning (Brookfield 1986, 58, 84; Taylor 1987). In my own experience, students generally express a high level of satisfaction with self-directed courses. In course evaluations three themes dominate. Firstly, students appreciate being given the chance to work on issues which come out of their own experience and are of concern to them. Secondly, students (as one of them put it) value 'the opportunity to listen and learn from the experiences of other group members'. Thirdly, students appreciate the individual attention and support they receive from staff, and often contrast this with the impersonality of other university courses they have undertaken. It is also clear that students who direct their own learning come to understand that learning is an emotional and intuitive as well as intellectual process, that learning is a social and relational as well as an individual matter, and that learning can be a nurturing and co–operative rather than a competitive experience (Taylor 1987, 191-3; Belenky et al. 1986).

But even here the picture is complicated. In a study comparing the experiences of adult educators undertaking accredited self-directed and teacher-directed professional development courses in an Australian college, Field found that while the students who directed their own learning were overall very satisfied with their course, at the end of their first year of study they were no more capable of directing their own learning than students whose learning had been directed by teachers (Field 1987). The self-directed students were critical of the lack or rigour in course content, wanted more consistency in staff assessment of student work, and also wanted rewards for excellence in student work (ibid.). (Assessment of student work in the course was criteria-referenced, and pass/fail graded).

Course content

The generally accepted notion of self-directed learning emphasises process, and in particular the importance of the teacher facilitating learning by working from learners' experience. The danger in this approach is that the content of learning will be neglected, that students' experience will be endlessly recycled and that students will not gain much new knowledge, or have their thinking challenged or extended. Part of the problem is that the received notion of self-directed learning has been greatly influenced by humanistic psychology, most especially by Carl Rogers' (1969, 1973) concept of the supportive, non-interventionist facilitator whose function is to help clients to become more aware of their feelings and thoughts, rather than to give them new knowledge and skills external to themselves. This influence has, in my experience, frequently resulted in a confusion between therapy and education in self-directed courses, to the detriment of students' learning. While counselling students is a legitimate aspect of teachers' work, it is important to distinguish between therapy and education. Facilitating participant-directed learning in an educational course is radically different from facilitating a therapy group. In the latter, people are sharing their experiences in order to deal with problems in their lives, or to find more satisfying ways of living. Their experiences—events in their lives, their thoughts and feelings—provide the subject matter of the group sessions. The facilitator works with that experience. But in an educational course, while it is important to work from where the student is, much of the content comes from outside the student's experience. The facilitator's task is to work out non-alienating ways of getting course content across to the student, ways of making the course content part of the student's experience. (Lovett 1975, Chapter 5, makes a similar distinction between adult learning groups and 'social group work' or group therapy).

The challenge for the teacher in self-directed courses is to find alternative ways of presenting information to students. Some such ways have been suggested above. In my own teaching the main way I deal with content is to produce booklets of readings, each of which has an introduction drawing out the main themes in the readings. Students are encouraged to read this material before class. They then discuss it in class, in small groups, and then in whole group plenary sessions, in which I restate themes and add information. In addition, when I feel it is necessary, I give a short lecture at the beginning of a class session. I find this approach enables me to put a lot of information before students, while allowing them to learn actively, and to control the input of information.

Learning contracts

Learning contracts are the heart of self-directed courses, for they offer students a greater opportunity to control their individual learning than any other learning experience. But working with learning contracts in accredited courses gives rise to difficulties and tensions. In this section I will draw on the experience of my colleagues and myself, in conducting self-directed professional development courses for adult educators, to illustrate the complexities of working with learning contracts.

In our experience, learning contracts are liberating for both students and staff. Students are able to focus on issues that are of immediate concern to them, and to link their formal learning to their jobs. By giving students opportunities to systematically analyse and act on issues and dilemmas arising in their work, learning contracts often lead to changes in work practices. Another benefit of contracts is that they reduce the alienated learning and competitiveness that characterise so much of formal education.

But there are problems with contract learning, which we are still working with after more than a decade. Contract learning is time consuming. It takes at least half an hour for a student and adviser to really negotiate a contract. As staff student ratios in higher education worsen, which they have now been doing in Australia for more than a decade, staff have less time to negotiate properly with students. A frequent outcome is for the adviser to ascertain quickly what a student is interested in and to dictate the contract, simply to get it written. This, of course, is not negotiated learning at all. A related problem is students' lack of time to work on contracts. All our students are practising adult educators and have competing demands on their time. Family and work usually come first in students' lives, often leaving little time for their studies. The situation is exacerbated by mounting work pressures on students resulting from funding cuts and other outcomes of economic restructuring. These pressures sometimes lead to barely satisfactory learning contracts being submitted in our programs.

Working with contracts is a learned skill, for both students and staff. Some people find the skill difficult to acquire. A recurring difficulty involves the establishment of clear and detailed criteria by which students' work will be assessed. As John Heron (1988) has noted, students whose whole educational experience has been teacher-directed are not used to 'critical thinking', especially in relation to their own work. A related difficulty is establishing parity of assessment across contracts and among staff advisers. This problem is exacerbated by the focus on individual contract learning that has become the norm in our courses.

None of this should be taken as an attack on contract learning or on self-directed learning in general. Even with the problems described here, contract learning is vastly superior to norm-referenced assessment in both learning outcomes and participant satisfaction. Much of our current difficulties with contract learning arise from it taking place within an educational program which certificates people. There will always be tensions between participants' goals and the requirements of educational institutions. The challenge is to find productive ways of working with these tensions. We are currently working on four strategies:

- Preparing students more thoroughly for participant-directed learning. This involves work on academic writing, contract learning and the theory of experiential and participatory learning.
- Stating assessment requirements more fully. This involves specifying what constitute 'major' and 'minor' learning contracts, and giving satisfactory and unsatisfactory examples of each.
- Achieving greater clarity and standardisation in assessment through meetings in which advisers read and discuss the work of each others' students.
- In subjects where there is lack of time to negotiate contracts properly, staff provide criteria, which students are encouraged to negotiate and revise.

Group dynamics

One aspect of the dynamics of self-directed learning groups—difficulties that arise in the transition from teacher-direction to student-direction—was discussed earlier in this paper. This section will examine a more general problem in the group dynamics of SDL. In the humanistic approach to SDL the learning group is seen as:

> an organism, having a sense of its own direction even through it could not define that direction intellectually… A group recognises unhealthy elements in its process, focuses on them, cleans them up or eliminates them, and moves toward becoming a healthy group...
>
> (Rogers 1973: 59).

In this approach to group work, the role of the facilitator is to establish a climate for learning by:

- 'listening as carefully, accurately and sensitively as I am able, to each individual who expresses himself';
- helping each group member to 'understand the meaning... experiences have for him now and the feelings they arouse in him';
- making 'the climate psychologically safe for the individual' (Rogers, 1973: 53).

This is a very supportive and optimistic view of group work (see Usher & Bryant 1989, 176). As Kovel (1978, 157-164) has pointed out, Roger's notion of the person reflects the optimism of American culture, largely ignoring the unconscious and the existence of negative emotions in people in groups. But to deny the existence of the unconscious is to ignore important group phenomena. Groups do behave negatively, irrationally and destructively. They also behave positively, rationally and creatively. Both tendencies are present in groups. (See for example, Bion 1951, 1961, 1970 and Menzies 1989).

The humanistic approach to SDL maintains that if the proper conditions are created then adult students will take responsibility for their learning and become effective, self-directed learners. This does happen to an extent. Many students in our university do take control of their learning. These students become very enthusiastic about their studies, and over a period of time demonstrate that their learning is feeding their practice. But there is another, negative, side of the mode of teaching and learning that has emerged in our institution. Some students never accept responsibility for or become excited about their learning. These people behave like many of their counterparts in conventional professional education courses and do the minimum amount of work required to gain their qualification. The humanistic model of education adopted in our school encourages this avoidance of responsibility. There is frequent, quite intense contact between staff and students, in small groups and in one-to-one advising sessions. In these sessions the academic and personal concerns of students often overlap, and staff go to great lengths to support students, both academically and emotionally. While such support is worthwhile, it has some unfortunate effects. It leads to the expectation that staff will be endlessly supportive of students. One outcome of this expectation is that is difficult for staff to challenge and extend students, who sometimes interpret attempts to extend them as attacks on them. A further result of this humanistic and supportive approach to teaching is that it encourages the release of unconscious feelings, which are repressed in more conventional teacher-directed forms of education, such as university lectures or tutorials. So, it is quite common for students to dramatise situations, or to attack and denigrate staff.

A further problem with the received notion of SDL is that in it staff are under pressure to adopt a false self, that of the endlessly supportive facilitator. This false self is supported by ideology, by institutional structures and culture, and by unconscious feelings. By casting themselves into the 'false self' of endless supporter, staff find it difficult to confront students, either academically or emotionally. This results in a number of tendencies. One is to academic mediocrity: for students to do just enough to get a 'satisfactory' grade. Another is for students to use staff as emotional dumping grounds, with whom they leave anger, frustration and other negative emotions which frequently have their origin outside the teaching situation. Yet another tendency is for staff to develop a teaching style which charms and disarms students, which papers over conflicts and which does not extend students intellectually.

The existence of these tendencies is traceable to the adoption of a humanistic model of education which denies the unconscious and the existence of negative emotion and behaviour. Paradoxically, it is this denial of the unconscious that has allowed this model of education to have such a strong hold in our institution. Unaware, students dump their negative feelings on staff. Unaware, staff put up with this, building as they do a false self of endlessly supportive facilitator.

To say this is not to condemn the humanistic model of SDL, or to seek to dismantle it. On the contrary, I believe that this educational approach is more satisfactory than the dominant telling mode, in both educational terms and in human terms. The point I wish to make is that SDL, like any form of teaching and group work in adult education is best understood as involving interactions of self and context, that such interactions are complex, many layered and have their negative side, and that people's unconscious minds are central to these interactions. Failure to come to terms with this complex and rather unpleasant reality will mean that adult educators who try to practice a humanistic approach to SDL may produce outcomes very different from the ones they intend.

Participant-directed learning

In the received version of SDL, adulthood is equated with individuals accepting responsibility for, and having control over, their lives (see, for example, Knowles 1975, 1984). But almost all the literature on SDL ignores the unconscious, interpersonal, institutional and broader social factors that make taking control of one's life a complex and ambiguous process. Even writers like Brookfield (1985, 1986) and Mezirow (1990), who emphasise the socially and culturally constructed nature of learning, do not go beyond general descriptions of the social context of learning, nor do they construct detailed strategies for dealing with contextual factors in SDL. We sorely need accounts by adult educators and learners, working in a variety of settings, of their experiences of doing SDL. (The contributors in Boud (1988) and Boud and Griffin (1987) provide some such accounts).

A related problem is that the dominant version of SDL focusses on self-development and personal liberation. The whole notion of personal liberation and self-direction is, I think, an illusion, because we live in a world with others and we can only develop ourselves with others. Otherwise, my liberation may be your oppression, and vice versa. For this reason I'm attracted to the notion of participant-directed learning, in which people in learning groups work together to take control over their learning, to support, resource and assess each other's learning.

Conclusion

This paper has sought to provide one answer to the question: how can teachers devise ways of giving students greater control over their learning? To do this is much harder than it may at first appear. Particularly important factors working against self-directed learning are the structure and culture of institutionalised education (in turn shaped by broader social and cultural forces), which support teacher-direction, and the resistance of students schooled in a transmission mode of teaching and learning. The challenge for the teacher interested in promoting self-directed learning is to create spaces in which it can develop, within largely hostile environments. The material on self-directed learning in formal education reviewed here suggests that essential to its success are:

- a deep understanding on the part of teachers of the structure, culture and dynamics of institutionalised education;
- teachers' ability to understand learning and teaching from the learners' perspective;
- provision of clear procedures, and support, to enable students to move from teacher-directed to self-directed learning;

- development of honest and caring interpersonal relationships, allowing all issues to be discussed and acted upon;
- development of a 'learning-teaching' dialectic, enabling students to direct their learning while at the same time being challenged and extended, rather than indulged, by their teachers.

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Chapter 7

Teaching for critical thinking

Paul Hager

The capacity to analyse problems, to anticipate trends and to take responsibility for work practices has become increasingly important for all levels of the workforce in this era of workplace change. As Hager points out, these capacities depend on the individual's capacity to think clearly and critically. He argues that vocational education and training should and can increase learners' capacity to think critically. The methods for teaching critical thinking rely largely on certain teaching behaviour: structuring of the learning environment to encourage active thinking, questioning and responding designed to encourage learners to apply ideas are amongst them. These are familiar techniques, but are rarely applied in ways that genuinely encourage critical thinking. This chapter has implications for all the learning strategies outlined in this book.

The capacity to help learners think about and expand their own thinking strategies is less familiar. This 'metacognition' (which Peter Russell also suggests as necessary in informal workplace learning in chapter 7) can be encouraged by a variety of reflective techniques some of which are also discussed in chapter 14 by Gowing, looking at teachers' self evaluation, e.g. journal keeping and modelling.

Critical thinking cannot be developed quickly. But if teachers and trainers use the variety of strategies outlined in this chapter (and this book) and apply the general principles discussed to other techniques they already use, then at least the process will have been started.

Introduction

No doubt some readers will be asking 'why a chapter about teaching for critical thinking?''. Hasn't thinking always been a central concern of education? Undoubtedly it has. Thinking, however, varies from such relatively low-level activities as recalling, comparing and classifying to higher level activities like credibility evaluation, assumption identification and determination of the strength of arguments or claims. These higher levels of thinking (usually called critical thinking) are the focus of this chapter. It will be argued that *vocational education and training should do more to develop the higher levels of thinking*. Various teaching strategies and techniques for achieving this, together with examples, will be outlined.

Why should vocational education and training teach critical thinking?

There are many reasons for wanting people to be better at higher-level (or critical) thinking. They include:

- People will be better equipped to compete effectively for educational opportunities, jobs, recognition, and rewards in our society.
- Good thinking is a prerequisite for good citizenship, e.g. it has been suggested that there can be no liberty for a community that lacks the critical skills to distinguish lies from truth.
- The ability to think well contributes to a person's psychological well-being; good thinkers are more likely to be well-adjusted individuals than not-so-good thinkers.
- We cannot afford for our students/workers not to be good thinkers. Our civilisation faces some very complex and threatening problems. We are now smart enough to destroy ourselves as a species and, unless we learn to be better thinkers in a broad sense, we may well do so.
- Thinking is at the heart of what it means to be human, so to fail to develop your thinking potential is to preclude the full expression of your humanity.
- Good thinking is increasingly needed to perform effectively in the workplace.

While each of these reasons is no doubt important, the last provides the main reason for critical thinking becoming a concern for vocational education and training. There is increasing evidence that the introduction of microelectronic technology into the workplace is creating an accelerating demand for good thinking ability as an essential requirement for effective job performance. (For a more detailed discussion of these issues see chapter 1.)

Bertrand and Noyelle (1988) studied technological change in banks and insurance companies in the United States, Japan, Germany, France and Sweden as part of an on-going project for the OECD's Centre for Educational Research and Innovation. They found that this once–stable sector is undergoing rapid change everywhere due to increased competition and growing use of computerised technology. This has required drastic revision of work patterns and organisation. Stable and well-defined work environments have been replaced by ever-changing and ill-defined environments. Straightforward, repetitive and concrete work processes have been replaced by non-routine and abstract work processes. Employees working under supervision have been replaced by employees taking decisions and responsibilities. Individual and isolated work has given way to group and interactive work. Operating within narrow geographical and time horizons has been replaced by operating within system-wide geographical and time horizons.

These changes have been accompanied by a 'flattening' of job hierarchies and a demand for broader, more general skills, particularly at middle and lower levels. Here is how Bertrand and Noyelle summarise the educational requirements for these new positions:

> ...the new skill requirements seem to place a premium on 'liberal arts' education (to use the Anglo-Saxon terminology) at the secondary and even early post high school level, that is on curricula which emphasise the teaching of broad skills rather than specialised, vocational knowledge: reading, writing, arithmetic, both verbal and written communication, the capacity to understand broad rather than specialised environments, and to identify problems and define solutions for oneself rather than memorise ready-made solutions to pre-assigned problems. As one bank official put it: "The bank can train anyone in becoming proficient in the use of specific techniques and procedures; the bank cannot train individual workers in thinking for themselves, in being at ease with broad and complex environments." (1988, p.73)

CEDEFOP (European Centre for the Development of Vocational Training) in 1987 devoted the first issue of its journal *Vocational Training* to 'The factory of the future and the future of work'. The major topics dealt with by the various contributors are the new work roles and work organisation required for the flexible manufacturing systems spawned by sophisticated computer technology. There are striking similarities to the findings of Bertrand and Noyelle on banks and insurance companies. Once again there is a demand for significant thinking skills:

> Operatives and their supervisors are now expected not just to react to events and single incidents but to anticipate them and take action. This broadening of the abilities demanded is radically changing the basic skills needed. Operatives must be capable of analysing and thinking for themselves. In addition to their basic technical knowledge, they must be capable of lateral thinking so that they can apply that knowledge within certain frames of action. They must also possess what, for want of a better term, will be referred to as the 'behavioural and attitudinal qualities' of forethought and commitment to the work they do. These will be determined by their 'social skills', their value systems and, in the final analysis, their education. It is altogether logical that the new skills expected of workers extend far beyond technological expertise, raising the question of what basic standard of education is required of skilled operatives.' (d'Iribarne 1987, pp.8–9)

Some of the general skills mentioned in the above examples from overseas findings are central to the restructuring of industry currently underway in Australia; e.g. multi-skilling, less rigid division of labour, more individual and collective responsibility. If Australian industry is to become more innovative and productive, it will require workers who are better thinkers and who display other general abilities that have traditionally not been encouraged in the Australian workforce. (For more on these trends see, e.g., Schrag 1988; Hager 1990; Hager & Laurent 1990.)

These trends clearly have major implications for vocational educational and training institutions. Amongst other things, course content, teaching methods and assessment procedures will need to undergo major change if these new skill requirements are to be met. In response to the restructuring of Australian industry, Schofield (1989) has sketched a range of changes that will be required in the vocational education and training system. These include:

- *Teaching and learning methods* will need to be less didactic and based more on enquiry and problem solving.
- *Skills* will need to be developed in the context of a problem and in group work rather than in isolation.
- *Students/workers* will need to become more independent learners.
- *Teachers and trainers* will need to move away from a set text, manuals and prepacked exercises to production and problem-solving. (Schofield, 1989, p.6)

All of this adds up to vocational education and training needing to pay more attention to ways of developing the higher levels of thinking in its courses. But what exactly are these higher levels of thinking that are broadly described as critical thinking?

What is critical thinking?

The most influential answer to this question comes from Ennis (1987). According to Ennis, good thinking is critical thinking, which he defines as follows:

> CRITICAL THINKING is reasonable reflective thinking that is focussed on deciding what to believe or do. As Ennis defines it, critical thinking includes both *dispositions* and *abilities*. The dispositions are inclinations or tendencies that are characteristically displayed by critical thinkers. The abilities are those capacities that are exhibited by someone who is thinking critically. By learning and practising the various dispositions and abilities, students/

workers will become better critical thinkers.

Major relevant *dispositions* are:

- Seek a statement of the thesis or question.
- Seek reasons.
- Try to be well informed.
- Use and mention credible sources.
- Take into account the total situation.
- Keep one's thinking relevant to the main point.
- Keep in mind the original or most basic concern.
- Look for alternatives.
- Be open-minded.
- Change position when evidence/reasons are sufficient.
- Seek as much precision as the subject permits.
- Deal with parts of complex wholes in an orderly way.
- Employ one's critical thinking abilities.
- Be sensitive to the feelings, level of knowledge, and degree of sophistication of others.

Major relevant *abilities* are:

Elementary clarification	• Focussing on a question • Analysing arguments • Asking and answering questions that clarify and challenge
Basic support	• Judging the credibility of a source • Making and judging observations
Inference	• Making and judging deductions • Making and judging inductions • Making and judging value judgments
Advanced clarification	• Defining terms and judging definitions • Identifying assumptions
Strategies and tactics	• Deciding on an action • Interacting with others

Ennis' analysis makes it clear that critical thinking is not a single capacity that learners either have or they don't. Rather there are many and varied components that make up critical (or higher level) thinking. Most learners will already display some of these dispositions and abilities to some degree. They will become better critical thinkers to the extent that their vocational education or training course leads them to further adopt/acquire/practice these dispositions and abilities.

If vocational education and training is to cater for the emerging job requirements of workers having better thinking skills, teachers/trainers will need to extend the range of their teaching repertoire to encourage these outcomes. How does a teacher/trainer set about helping learners acquire the dispositions and abilities listed by Ennis?

How to teach for critical thinking

Amongst a number of books devoted to this topic (e.g. Baron and Sternberg 1987; Beyer 1987; Costa 1985; Meyers 1986; Nickerson Perkins and Smith 1985; Perkins 1986; Swartz and Perkins 1990), one that is particularly useful for its practical classroom suggestions and ideas is Costa and Lowery (1990). This book points out that research over the last fifteen years has demonstrated that certain identifiable teacher/trainer behaviours have a direct influence on students/workers learning to think effectively. Specifically:

- The way a teacher/trainer *structures* the classroom can enhance individual, small-group, or total-group interactions which elicit active learner thinking.
- A teacher's/trainer's *questions or directions* can help learners collect and recall information, process that information into meaningful relationships, apply those relationships in different or novel situations, and actively use thinking skills.
- The way a teacher/trainer *responds* to a learner's ideas or actions can help that learner maintain, extend, and become aware of their own thinking.
- The teacher's/trainer's *infusion* of opportunities for thinking into the day-to-day language and operation of classroom routines, especially when using regular curriculum materials, leads learners to value good thinking.
- Focussing on, discussing, and labelling learners' *thought processes* helps them become aware of, apply, and expand their repertoire of thinking abilities and strategies.

Not surprisingly, some of these teacher/trainer behaviours are already familiar to us as sound teaching practice, others are less familiar. In all cases the focus is on the learner's thinking processes and how these can be enhanced. The following sections elaborate on each of the above.

Structuring the classroom for thinking

Structuring describes the various ways teachers/trainers control such aspects of the classroom environment as *time, space, human energy and materials*. Research has clearly demonstrated that higher learner achievement is produced in a well-structured classroom where:

- learners know the objective of the lesson;
- time is used efficiently;
- the teacher/trainer is clear about directions;

- the classroom environment conveys a congenial sense of order;
- learner energies are engaged in a meaningful learning task.

Instructional clarity is enhanced by:

- frequently repeating concepts from one sentence to the next;
- doing the same thing in more than one way;
- reviewing prior work;
- preparing learners for upcoming tasks by describing the work to be done and the means to accomplish it;
- allowing time for learners to think about, respond to, and synthesise what they are learning;
- using visual and verbal examples;
- reviewing difficult concepts by use of the chalk-board or other teaching aids; and
- the teacher/trainer modelling the type of performance required in the task.

Structuring for thinking

- Different learners need different classroom organisational patterns. Some students/workers learn best individually; some learn best in groups. Some need a great deal of structure and others need minimal structure. Less able learners do better in highly structured learning situations where direct help is generous, while more able learners profit from less structured situations. So a teacher/trainer should be able to employ a range of organisational patterns.
- Research indicates that direct instruction, where the teacher/trainer is making most of the decisions about the content which the student/worker is learning, may be an inhibitor to students'/workers' higher-level and creative thinking. The evidence suggests that when higher-level thinking, creativity and problem solving are the objectives, learners must be in a classroom climate where they are in the decision-making role; they decide on strategies to solve problems; they determine the correctness or incorrectness of an answer based upon data they produced and validated; and they are involved in setting their own goals and means of assessing accomplishment of those goals. Furthermore, the reward system in such a classroom should be intrinsic to the task rather than extrinsic, based upon the teacher's/trainer's responses. It should be derived from internal motivation to learn; intellectual curiosity about phenomena; a striving for craftsmanship and accuracy; a desire to be a responsible, productive and

interdependent member of a community of learners; and a desire to emulate significant, respected others.

- Teachers/trainers who value internal rather than external rewards engage learners in structuring their own learning and realise there is human variability in learning. They will use variety of classroom organisational patterns such as:
  - individual learners working alone on tasks requiring one or more cognitive skills;
  - groups working co-operatively on collaborative problem solving tasks;
  - discussions, etc., involving the total group.

Teacher/trainer initiated questions and directions that elicit thinking and learning

Research has demonstrated that teachers/trainers can cause learners to think by carefully designing the syntax of questions and statements. Thought processes can be conveniently classified (Costa and Lowery 1990, chapter 2) as follows:

- *Input* of data through the senses.
- *Retrieval* of information from short- and long-term memory storage.
- *Processing* of data through various thinking structures into meaningful relationships by comparing it with or relating it to information in short- and long-term memory.
- *Output* or application of those relationships to new situations.
- *Metacognition* or thinking about our own thinking.

Teachers/trainers can intelligently structure questions and statements to engage learners in particular activities that enhance and improve thinking. Examples for each of the above thought processes follow.

Gathering information via the senses input

Questions and statements are here designed to activate learners' senses to gather data whether by direct perception of objects or indirectly through communication with other people or from written sources of information. Relevant key-words to use in such questions and statements include:

see
listen
touch
view
taste
smell
hear
feel
sniff

Examples of such questions or statements might be:

- "Take careful note of the smell of this dish. Now taste it."

- "What do you see in the beaker?"
- "Watch carefully to see what happens"
- "Can you hear the difference?"

Recalling information from short- and long-term memory (retrieval)

Questions and statements are here designed to draw from the learner the concepts, information, feelings, or experiences acquired in the past and stored in memory. Relevant key-words to use in such questions and statements include:

describe
recall
complete
list
define
count
identify
recite
name

Examples of such questions and statements might be:

- "What dish does this smell remind you of? What about its taste?"
- "Name the parts of this plant"
- "List the steps required to complete this task"
- "Identify the metals in the box in front of you"
- "What is this instrument used for?"

Making sense out of the information gathered (processing)

Questions and statements are here designed to process data gathered through the senses and retrieved from short- and long-term memory. Such questions and statements lead learners to draw cause-and-effect relationships and synthesise, analyse, summarise, compare and classify data. Relevant key-words to use in such questions and statements include:

synthesise
explain
contrast
experiment
sequence
analyse
classify
group
organise
summarise
make analogies
categorise
compare
relate
distinguish
state causality

Examples of such questions and statements might be:

- "In what ways are computers analogous to humans? In what important ways do they differ?"
- "Which of the two basic causes of excessive current in a circuit applies in this case?"
- "You are presented with a range of different kinds of glass. Classify them according to the types of glass-cutter required for cutting them."
- "Compare the strength of steel to the strength of copper."
- "Why does water boil at lower temperatures above sea level?"

- "What do you think caused the liquid to turn blue?"
- "How does the formula for finding the volume of a cone compare with the formula for the volume of a pyramid?"
- "Work out a sequence of steps for preparing this dish, so that all of the ingredients will be ready at the same time for the final stir frying."

Applying and evaluating actions in novel situations (output)

Questions and statements are here designed to lead learners to apply concepts/principles that they have learnt to a novel or hypothetical situation. Application invites the learner to think creatively and hypothetically, use imagination, expose or apply a value system, or make a critical judgment. Relevant keywords to use in questions and statements to promote these complex thinking activities include:

applying a principle
evaluating
extrapolating
inferring
generalising
imagining
judging
creating
hypothesising
model building
planning
predicting
forecasting
speculating
designing

Examples of such questions and statements might be:

- "From the given data work out whether the hotel will have the rooms available to meet the airline's request" (Applying a principle)
- "Design a circuit that would be suitable for this job"*(Designing)*
- "From the observed facts, what would you judge to be the likely cause of this plate glass fracturing" *(Judging, inferring, hypothesising)*
- "If rain-forests continue to disappear at the current rate, what will be the long term effects?" *(Speculating)*
- "What can you say about all countries' economies that are dependent upon only one crop?" *(Generalising)*
- "From the given data for a week and the principles that you have learnt, estimate how many cleaning staff will be needed by the hotel in that week" *(Predicting)*
- "From what we have learnt, which painting is the best example of surrealism?" *(Judging)*
- "What do you think might happen if we placed the salt-water fish in the fresh-water aquarium?" *(Hypothesising)*
- "From our experiments with food colouring in different water temperatures, what can you infer about the movement of molecules?" *(Inferring)*

Thinking about our own thinking (metacognition)

This is discussed below.

Teachers' response behaviours that support and extend thinking and learning

Teachers'/trainers' response behaviour greatly influences learners, more so than the teacher's/trainer's questioning or directions. Learners are constantly anticipating how their teacher/trainer will respond to their actions. Research demonstrates that the teacher's/trainer's responses have a great influence on the development of learners' self-concepts, their attitudes towards learning, their achievement, and their classroom rapport.

Response behaviours may be categorised according to the effect those behaviours have on learners: those that tend to terminate or close down thinking; and those that maintain, open up, or extend thinking. There are six behaviours that can be classified under these two categories:

Terminal or closed responses

- Criticising (and other put-downs)
- Praising

Open or extending responses

- Using silence (wait time)
- Accepting—passively, actively or empathically
- Clarifying—of both concept and process
- Providing information

Terminal or closed responses

Criticism may be defined as a negative value judgment. The use of criticism usually is *not* an appropriate response since it leaves the learner with feelings of failure and cognitive inadequacy and contributes to a poor self-concept. It is unlikely to encourage or enhance thinking. However, in appropriate situations constructive criticism, within an overall supportive environment, can enhance thinking. In such cases, feedback should be non-judgemental.

Praise the opposite of criticism, employs positive value judgments. Surprisingly, while many teachers/trainers advocate the use of praise in attempts to reinforce behaviours and to build self-worth, the research on praise indicates that more often its effect is negative. Praise builds conformity. It makes learners depend on others for their worth rather than upon themselves. If teachers/trainers use praise indiscriminately it can become a meaningless response. Rather it should be used sparingly and judiciously in appropriate circumstances.

Such circumstances include:

- with reluctant, unmotivated, dependent learners;
- with young children rather than adults;
- with low-level cognitive tasks, e.g. recall or sensory observation reports.

When using praise:

- Give the criteria or rationale for the value judgment
- Help learners analyse their own answers.

Open or extending responses

Using silence (wait time)

Many teachers/trainers wait only one or two seconds after having asked a question before they call on someone to answer, ask another question, or give the answer to the question themselves. They feel that unless someone is talking, no one is learning. If, however, learners are to be given opportunities to do their own thinking, their own reflecting, their own problem solving and determining an answer's appropriateness, then teachers/trainers need to be comfortable in allowing these periods of silence to occur.

Accepting responses

- *Passively*: receives and acknowledges what the learner says without value judgments.
- *Actively*: reflects what the learner says or does by rephrasing, paraphrasing, recasting, translating, or summarising. Teachers/trainers use this response when they want to extend, build upon, compare, or give an example based upon what the learner has said.
- *Empathically*: accepts feelings as well as content.

Clarifying

Used where the teacher/trainer doesn't understand the learner's answer.

Providing information

Occurs when the teacher/trainer perceives that the learner requires further information or the learner asks for it, and the teacher/trainer responds accordingly. This will occur naturally in an environment that encourages thinking.

Using 'thought-full' language in the classroom

Language and thinking are inextricably linked. Language is central to the development of an individual's thinking capacities. This implies that teachers/trainers interested in developing learners' intellectual capacities must also develop a 'language of thinking'. Teachers/trainers must become proficient at embedding, in their everyday classroom, language opportunities for learners to hear cognitive terminology, thereby presenting learners with day-to-day challenges to think.

Thinking words

Instead of saying	Speak 'thoughtfully' saying
"Let's look at these two examples"	"Let's compare these two examples".
"What do you think will happen when…?	"What do you predict will happen when…?"
"How can you put into groups…?"	"How can you classify…?"
"Let's look at this problem".	"Let's analyse this problem".
"What do you think would have happened if…?	"What do you speculate would have happened if…?"
"What do you think of this result?"	"What conclusions can you draw about this result?"
"How can you explain…?	"What hypotheses do you have that might explain…?"
"How do you know that's true?"	"What evidence do you have to support …?"
"How could you use this?"	"How could you apply this?"

Classroom management

In communicating instructions, teachers/trainers can speak *'thought-fully'* by using questions and statements which require learners to identify what is needed to successfully complete a task. Too often teachers/trainers give all the information so that learners merely perform the task without having to infer meaning. For example:

Instead of saying	Speak 'thought-fully' saying
"Remember to calibrate the detector first, otherwise your reading will be inaccurate"	"In order to ensure that your reading is accurate, what is the first thing you must remember to do?"
"For our industrial visit, remember to bring …"	"What must we remember to bring on our industrial visit?"

Probing for specificity

Spoken language is full of omissions, generalisations and vagueness. We speak 'thought-fully' when we cause others to define terms, be specific about their actions, make precise comparisons, and use accurate descriptors. For this, it is important to be alert to certain categories of vague or unspecified terms:

- universals, including always, never, none, everybody, all;
- vague terms describing actions, e.g. know about, understand, appreciate;
- comparators, e.g. better, newer, cheaper, more nutritious;
- unreferenced pronouns, e.g. they, them, we;
- unspecified groups, such as the teachers, employers, the industry, big business, things;

- assumed rules or traditions, using, for example, ought, should, or must.

When such words or phrases appear in the speech or writings of others, we speak 'thought-fully' by having them specify, define, or reference their terms:

When we hear	**Speak 'thought-fully' saying**
"He never listens to me."	"Never? Never, ever?"
"Everybody has one."	"Everybody? Who exactly?"
"The employers ..."	"Which employers?"
"This cereal is more nutritious ..."	"More nutritious than what?"
"They won't let us ..."	"Who are 'they'?"
	"Which administrators?"

Helping learners think about and expand their repertoire of thinking abilities and strategies

Main components of metacognition include developing a plan of action, keeping that plan in mind over a period of time, and then thinking back on and evaluating the plan upon completion. Developing a plan of action before embarking on a course of action, such as repairing an engine, replacing a broken window, conducting an experiment, or, indeed, presenting a lesson, enables us to be consciously aware of the steps to be followed. To improve action-planning skills, teachers should encourage learners to:

- think about the sequence of operations;
- identify steps where errors are likely;
- identify the different kinds of feedback that will be available at various points and evaluating the usefulness of that feedback.

To help learners to keep the plan of action in mind during the course of action, teachers should encourage learners to:

- think about where they are in the sequence of operations;
- know when a sub-goal has been obtained;
- detect errors and recover from these errors either by making an adjustment or by retreating to the last known correct operation.

To help learners to think back on and evaluate the plan of action upon its completion, teachers should encourage learners to:

- explain why errors were made;
- suggest improvements in the plan of action;

- evaluate the quality of performance of the various operations in the sequence.

Exercise

Give examples of each of the above metacognitive skills by analysing suitable processes, operations or courses of action taken from your own teaching/training field.

Strategies for promoting metacognition

Strategy planning

- *Before* the activity starts, teachers/trainers should help develop and discuss strategies and steps for attacking the problem, rules to remember, and directions to be followed. Such things as time constraints, main aims, and principles to be followed should be clarified and thoroughly understood by the learners. This will assist learners to keep these in mind during the activity and help them evaluate their performance after the activity.
- *During* the activity, teachers/trainers should invite learners to discuss their progress and their thought processes. Asking learners to indicate where they are in their strategy, to describe the progress of their thinking up to that point, and to describe possible options for their next step all help them become more aware of their own behaviour. (It also provides the teacher/trainer with indicators of the learner's thinking, which can be used to develop more effective individualised assistance).
- *After* the learning activity is completed, teachers/trainers can invite learners to evaluate how productive were the various strategies and steps in the activity, how well the rules were followed, and whether the directions were helpful. Learners can also be asked to suggest alternative, more efficient strategies that could be tried in the future.

Conscious choosing

- Teachers/trainers can promote metacognition by helping learners to explore the consequences of their choices and decisions prior to and during the act of deciding. Learners will then be able to perceive causal relationships between their choices, their actions, and the results they achieved. Providing non-judgemental feedback about the effects of their actions and decisions on others and on their environment helps learners become more aware of their own actions and decisions.

Differentiated evaluations

- Teachers/trainers can promote metacognition by causing learners to reflect upon and categorise their actions according to two or more sets of evaluative criteria. Thus learners might be invited to distinguish what was done that session that was helpful and hindering, what were the pluses and minuses of the strategy, what they liked and disliked, etc. So learners must keep the criteria in mind, apply them to multiple classification systems, and justify their conclusions.

Outlawing "I can't"

- Teachers/trainers should inform learners that excuses such as "I can't...", "I don't know how to...", etc. are unacceptable behaviours in the classroom. Instead, acceptable alternative behaviours include having learners identify what information is required, what materials are needed, or what skills need developing for the set task to be completed. This helps learners to identify the boundaries between what they know and what they need to know. It encourages persistence and develops the learners' ability to create strategies that will produce needed data.

Paraphrasing or reflecting back learners' ideas

- As noted in the earlier discussion of teachers'/trainers' response behaviours, paraphrasing, building upon, extending and using learners' ideas can make them conscious of their own thinking. To achieve this, teachers/trainers might say things like "What you're telling me is..." or "What I hear in your plan are the following steps..." or "Let's work with Barbara's strategy for a moment."
- Inviting learners to restate, translate, compare, and paraphrase each other's ideas causes them to become not only better listeners to other's thinking, but better listeners to their own thinking as well.

Labelling learners' cognitive behaviours

- By placing labels on learners' cognitive processes, teachers /trainers can make them more conscious of their own actions: "What Geoff is really proposing is an experiment"; "What you are suggesting is that we create a plan of action for..."; "So you believe analogy is very helpful for understanding 'x'".

Journal keeping

- This can be a powerful device in promoting metacognition. Keeping a personal journal throughout an experience causes the learner to synthesise thoughts and actions and to translate them into symbolic form. The record also provides an opportunity to revisit initial perceptions—to compare the changes in those perceptions with the addition of more data; to chart the processes of strategic thinking and decision making; to identify mistaken assumptions; etc.

Modelling

- The ways teachers/trainers model their own intellectual processes help learners to emulate desirable forms of thinking and intelligent behaviour. Teachers/trainers who effectively demonstrate metacognition will very likely induce learners to metacogitate. Examples of public metacognitive behaviour by teachers/trainers include:

- sharing their planning by describing their aims and objectives and giving reasons for their actions;
- making human errors, but then being seen to recover from those errors by getting back on track;
- admitting they do not know an answer, but designing ways to produce one;
- seeking feedback and evaluation of their words and actions from others;
- having a clearly-stated value system and making decisions consistent with that value system;
- being able to self-disclose, e.g. by using adjectives that describe their own strengths and weaknesses;
- demonstrating understanding and empathy through listening to, and accurately describing, the ideas and feelings of others.

Conclusion

This chapter has explained why critical thinking has become very important for vocational education and training. The developments outlined in chapter 1 demonstrate that critical thinking will be a vital part of the efforts to improve the Australian workforce's pool of skills. It has also been shown in this chapter that critical thinking is not a single capacity that learners either have or they don't. Rather there are many and varied components that make up critical (or higher–level) thinking. This in turn means that improving one's critical–thinking capacity is a long, stepwise process which takes many and varied forms. For teachers/trainers there are many strategies that can be employed to help improve learners' thinking. This chapter has outlined and discussed many of these strategies. It is hoped that teachers/trainers will be inspired to try some of these ideas and develop further strategies of their own.

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Chapter 8

Mentoring and coaching

Peter Russell

The role of informal learning in the workforce has only just begun to be studied. In this chapter Peter Russell points to the long tradition of this kind of learning and the need to maintain and develop it in association with other more formal methods. He argues that the capacity to think about one's thinking and learning (metacognition) are vital in producing a workforce capable of meeting the challenge of change. Mentoring and coaching can play a vital role in producing these capacities through encouraging trainees to analyse and reflect on their performance at work. Hager also argues for the importance of reflective techniques in his chapter on critical thinking, as do Gowing and Saunders in the examination of self–evaluation in chapter 14 and Leigh and Schaafsma in their discussion of games and simulations.

Like most learning strategies, however, monitoring and coaching will not be effective unless they are carefully planned. Russell points to the qualities needed of mentors and the need to match compatible individuals. Likewise coaches need to undertake certain tasks such as problem posing, holding 'post mortem' sessions and so on which require certain personality characteristics. These attributes or personality characters are similar to those raised by Scott in chapter 2. In addition the issue of how to develop learners so that they become more self–directed as outlined in chapter 5, are important issues for mentors and coaches to consider.

Introduction

> *"Well then," proposed Socrates, "if you should ever be charged in actual fact with the upbringing and education of these imaginary children of yours… so you will make a law that they must devote themselves especially to the technique of asking and answering questions."*
>
> *"Yes, I will, with your collaboration."*
>
> *(Plato: Republic VII:534)*

Formal instruction has come a long way since Socrates took his students (one at a time) for walks by the river. The dramatic increases in the quantity and complexity of the knowledge and skills required to function in modern occupations has led to a 'mass production' version of those ancient teaching methods. Also, the proportion of the population with access to education and training has increased greatly. Teachers and trainers still follow elements of Socrates' methods, but important aspects may have been lost due to the demands of quantity. The quotation above provides one example of those losses. Questioning in the traditional classroom context is mostly one-way. Teachers ask them and students answer. The few student questions are frequently only points of clarification, learners are rarely encouraged to generate questions which steer the lesson on to new ground (Dillon 1990). To Socrates, this wastes at least half of the potential for learning!

This chapter examines methods of recovering some of the valuable elements of learning which have been lost in the classroom environment. The processes of mentoring and coaching have much to offer in this respect. Both are training strategies usually classified as informal learning (Marsick 1987). They are more often associated with the workplace than the college or training institution, but teachers and trainers need to appreciate their value and understand the processes so that they can be promoted and used to guide those responsible for their application. Mentoring is as much an idea as a clearly defined training strategy. A mentor is a person who takes on (or is given) the responsibility for another's learning and general development. Coaching is the more specific process of learning from or about a task while actually performing it. Coaches can be senior practitioners, experienced co-workers or colleagues.

Mentor was the name of a character in Homer's *Iliad* and *Odyssey*, to whom King Odysseus passed the responsibility for the education of his only son, Telemachus. While the King was away fighting the Trojan wars, Mentor proved to be more than a teacher. He guided and protected his 'student' as well as organising his formal instruction. Mentor knew that ultimate success depends on more than the accumulation of knowledge and skills; the student becomes a protégé when his or her senior is also a patron, sponsor, counsellor and guide in the application of knowledge and techniques. Today, mentoring relationships can be seen in many workplace situations, but several traditional applications are under pressure due to modern practices.

The relationship between an apprentice and master, or lawyer and articled clerk has long been that of mentor and protégé. In recent years, more formal and structured training programs have encroached on the mentor's role. Quantity of both trainees and information and complexity of methods and techniques have made this necessary to ensure some uniformity in training outcomes. This country is presently giving considerable attention to competency-based training and other systems which seek to increase that uniformity and accountability for the 'training dollar'. Two important questions arise from these trends; firstly, what components of learning might not be satisfactorily replaced by formal training methods?, and secondly, can mentoring (and/or coaching) be incorporated into the workplace to bridge any gaps that occur?

These questions are relevant to anyone engaged in human resource development, whether as workplace trainers or college teachers. As vocational training becomes more a specialised field of study and expertise, there may be a greater tendency to approach training problems with more and more formal courses. The role of informal and incidental learning in the workplace should not become a casualty of innovations in other areas (Marsick and Watkins 1990). It is also likely that important elements of adult learning principles are better addressed in informal learning settings than in the training room. The needs which adult learners have for relevance, use and recognition of prior experience, control over their learning content and activity, and interaction with trainers and other learners, cannot all be met by formal instruction.

Gaps in formal training

To return to the question of what may be missing in formal learning contexts, consider the following example of a person who installs burglar alarms. Mentoring techniques are common in this industry due to the balance of tangible and intangible competencies required for truly skilled performance. No matter how thorough the job analysis undertaken before the design of a formal training program, there remain elements of the job which require the interpretation and integration of knowledge and skills. The installer is also the seller and adviser, the periodic servicer and the trouble-shooter who attends complaints about false alarms or problems due to incorrect use. The practitioner is a consumer-trainer, consultant and company representative. Service calls often follow break-ins when the customer is agitated and angry, ready to blame equipment and/or previous advice. Competition in the industry is fierce, and survival depends on a range of behaviours and attitudes within which the technical aspects form only a small part.

The relationship which is required between a new installer and a more experienced practitioner goes beyond a simple 'sitting next to Neddy' sequence of visits to customers. The mentor, among many other things, follows Socrates' advice of encouraging an interactive learning situation in which the recruit is expected to generate questions on scenarios which may eventuate. The (usually) younger person will also be asked to comment on the way recent jobs were approached, and to reflect on alternatives and consequences. As the trainee learns, the mentor becomes a patron who introduces the protégé to contacts and clients, advises on those who can be relied upon and those who cannot. Even such things as dress, courtesies and idiosyncrasies of clients (and bosses) can be important. When things go wrong, the mentor may act as a counsellor. In short, according to Bova (1987, in Marsick) mentors are concerned with both personal development and learning experiences.

The things which people learn from mentors are also of interest to researchers in cognitive learning theory. The importance of knowing about and selecting appropriate learning strategies has been extensively researched (Ames and Archer 1988). The related issues of metacognition (thinking about thinking and learning) and development of self-regulation (Corno 1986, Zimmerman 1989) are thought to play a vital role in real and useful learning. Many of these factors have been related to the shortcomings of formal education by Resnick (1987) and Collins, Brown & Newman (1989). Collins et al. used the term "cognitive apprenticeship" to describe the difference between the simple acquisition and retention of concepts and skills, and that level of learning which enables a person to extend and modify their knowledge as a controller of it, rather than its instrument.

Mastery over material that is taught in formal training is seen to come from the observation and modelling of the specific methods that experts use when performing tasks in realistic settings. Collins et al. also noted the value of supervision of practice which occurs in traditional apprenticeship systems. In describing coaching as a process which provides 'scaffolding' (support) for people acquiring skills, they highlight the frequently ignored function of the expert in helping with; 'activities that require students to actively integrate and appropriately apply sub-skills and perceptual knowledge' (p.455).

Similarly, the relationship between the learner and the person with greater knowledge and experience is thought to have a profound influence on such variables as self-esteem and the ways in which people learn from past successes and failures (Cooper 1983, McCombs 1986). The helping expert on the job can provide a model for the trainee's perception of a 'possible self'. When failure strikes, the expert can ensure that the cause of the failure is correctly attributed to a factor such as lack of effort. Attributions to insufficient ability or bad luck are seen by many researchers in cognitive psychology as having a negative influence on self-esteem and future motivation. Mentors feature in all these aspects of learning how to do jobs effectively in complex and continually changing circumstances. Coaching strategies, in which the emphasis is on learning from guided analysis and reflection on performance of a task at hand, offer similar opportunities to those of broader mentoring relationships. At times the mentor will act as a coach, or may organise discussions (or casual conversations) through which analysis, reflection or strategy selection can emerge. What is of greatest significance is the inability of formal classroom techniques to completely replace these workplace contributions to the training process. This leads to the second question of how mentoring and coaching can be incorporated into the workplace to supplement formal training programs.

The strategies

In order to promote and set-up mentoring systems in occupational settings, it would be desirable to have at hand some structured strategy which has been shown to be successful. Unfortunately, no such blueprint exists. It is perhaps mentoring's place in informal learning which not only explains this, but makes it desirable. An easier and less prescriptive task is to draw a profile of the mentor's role. In this way managers and trainers can select those functions of mentoring which match the needs of trainees, potential mentors and the job itself. Later sections will highlight the importance of careful selection and preparation of mentors, as it is a demanding role requiring considerable skill, appropriate attitudes and a suitable temperament.

What do mentors do?

Many of the following activities and responsibilities of mentors will also help to describe what sort of people they need to be:

In general, then Mentors:

- share the responsibility for the personal development and learning outcomes of their protégés;
- provide advice on both major and minor career options.
- encourage thinking on complex issues which integrate more specific knowledge about job procedures and skills;
- encourage questions about the interpretation of information and situations which might be encountered on the job;
- communicate expectations of satisfactory performance, but with first-hand knowledge of the protégé's stage of development, limitations and needs;
- listen for insights on the trainee's problems with learning or general aspects of the job;
- set up situations which require the application and integration of sub-skills and competencies;
- act as a role model, particularly for attitudes and values;
- recognise and address anxieties, then try to forge the link between ultimate success and effort invested (rather than to innate ability or chance factors);

- provide opportunities for review and revision of material learnt in formal training, this being more beneficial due to its currency and task relevance;
- provide immediate knowledge of results (vital in early stages of skill acquisition);
- allow for realistic evaluation and assessment of performance. The mentor sets goals according to job requirements and standards as well as the protégé's stage of development (not to a pre-ordained curriculum);
- use his or her senior position, contacts and influence to advance career prospects, visibility and opportunities (Bova, in Marsick, 1987);
- set challenges which match abilities and help to ensure success. This builds confidence as well as attainments for advancement in the organisation;
- act as a devil's advocate, challenging and confronting the protégé, and forcing him or her to think through a possible situation that he or she may become involved in at some time (Bova, in Marsick, 1987);
- help to plan and schedule formal training courses;
- provide counselling on personal problems—often very effectively due to bonds developed through other roles.

What do coaches do?

Although mentors are frequently engaged in coaching activities, coaching remains as a sub-set of the mentoring role. Mentors may set up coaching programs using other staff. Coaches do not have to be senior personnel, they may be colleagues and co-workers. The process relies on the collaborative efforts of people working on a common task. They assist each other in the analysis of methods and performance, giving feedback and guidance. Obviously, these situations do not always arise spontaneously. Trainers, managers or mentors need to provide the resources, incentives and workplace conditions which will sustain them. Work environments are often based on individualised (if not competitive) structures. The sharing of experiences, knowledge and skills may only occur as a consequence of direct management intervention.

Like mentoring, there is no tried and tested blue-print for setting up workplace coaching programs. The list below outlines activities which typify the coaching process. The design of a strategy to implement such programs will depend on context variables such as; occupational level of participants (unskilled/trade/professional etc.), complexity and difficulty of the task or skill, the number of staff engaged in the targeted activity, and the time or other resources available.

Typically, coaching includes:

- times set aside to discuss strategies and procedures which will allow sharing of experiences and perspectives related to aspects of jobs or tasks;

- regular opportunities for members of the coaching 'team' to observe other members at work or the products of their work;
- feedback exercises or sessions in which members provide low-inference feedback on other's performance (Yacowicz in Marsick, 1987);
- the posing of problem scenarios (either real or fictional) for practitioners to solve or determine appropriate responses;
- 'post-mortem' sessions in which recently completed projects or jobs are discussed and action plans are developed to ensure errors are not repeated;
- project planning meetings through which coming activities are discussed and best-fit strategies are debated and agreed;
- the monitoring of practice toward pre-set standards of competence, and the verification of achievement by team members.

The term 'coaching' usually reminds people of sport or perhaps drama or music. The activities above can be seen to apply to these situations as well as workplace learning. A feature of all is that it is not the foundation skills or knowledge which are the focus of coaching, but the refinement and integration of existing abilities to produce truly skilled performance. It is this level of learning which is so difficult to address in the classroom, and therefore must be provided on the job.

Mentoring in practice

Earlier the case of the burglar-alarm installer was given to illustrate the need and rationale for mentoring programs. Some jobs require these methods more than others. In the past, mentoring has been the dominant mode of training for both trades and professions. From the village blacksmith's apprentice to naval midshipman or lawyer's articled clerk, knowledge, skills and attitudes were passed on with little reliance on formal classroom instruction. For examples of mentoring in practice, this historical perspective is a worthwhile starting point. The idea and strategies are not new, they only require modification to ensure that they supplement the more modern and formal approaches. Most of us can think back to a person or persons who took on the role of mentor in our early training (even if only briefly). If they were at all competent in their role you can probably also recall the considerable value of their intervention.

Organisations which have established mentoring programs in place for significant numbers of staff are still quite rare in this country. The practice is common enough among executive and senior management, but even there it is most likely to be casual and largely unpredictable. One organisation which has made considerable progress and innovation in this area is the Australian Taxation Office. Although the method has been implemented in several job areas, one specific example will be outlined here. Officers who are engaged in the auditing of tax payers' records in the field face a number of unique situations. Their formal training in accounting or law is not sufficient for the range of experiences and decisions which are required, sometimes on the spur of the moment. In one sense these staff are investigators; they are consequently misled as often as assisted; they must have a repertoire of strategies for determining the truth; and they would rarely encounter two identical situations in the course of a single year. They also require extensive incidental knowledge of what is normal or abnormal in various businesses and occupations. To function effectively, mentoring methods are used in the course of their on-the-job training.

Field auditors have a designated senior officer from whom they receive essential guidance and specific help. In the early stages of training, the trainee accompanies his or her 'mentor' on both straightforward and complex audits. The trainee is involved in the preparation for the field visit, and the senior discusses each facet of the audit, asking questions and calling for suggestions. During this process the trainee learns a great deal about 'the way things are done'. The experienced officer may be alerted to aspects of past taxation returns or declarations which seem suspicious; this may be a quite intuitive process, but the line of thought will then be verbalised and explained to the trainee. When it comes to the actual visit (often a place of business), the trainee has the opportunity to observe the event from an informed perspective. Unexpected developments during the interview or audit provide the trainee with concrete examples of appropriate responses. Following the visit, the procedure is reviewed with the trainee again both answering and asking questions, providing comments and interpreting what has been seen.

In later stages of training, the senior officer extends the mentoring role with advice on complex issues, contacts for acquiring information, knowledge on past cases and court judgements or perhaps informal debate on points of law or procedure. When the trainee 'goes solo' and is responsible for major audits, possibly with many thousands of dollars at issue, the mentor's role can become that of counsellor and confidant.

Their own experience with coping with the stress of the job can be extremely valuable and relevant. As might be expected, no single instance of mentoring will feature all the possible roles that a mentor can play. Within the same organisation, one mentor may play one role more enthusiastically than others. Similarly, personality matches (or mismatches) can drastically influence both mentors and protégés.

Getting it to work

The successful transformation of an idea into a workplace setting requires considerable thought and skills in the management of change. For mentoring and coaching particularly, care and sensitivity are required. Staff may react negatively to the notion that such a hierarchical distinction as mentor and protégé has been suggested. Not all senior staff may be suited to the role. How does one leave them out of the plan? As mentioned before, some work environments are highly competitive. How can the collaborative components of coaching hope to survive when personal experiences are guarded as trade-secrets? These and other issues must be thought through before staff are introduced to the details of the strategies themselves. Chapter 2 of this volume addresses these and other issues concerned with the management of educational change. Such considerations go hand-in-hand with the specific requirements of instigating more effective informal workplace learning systems.

Mentoring is primarily dependent on personality and attitude variables. Since mentors must allocate time and imagination to their training responsibilities, and also be prepared to pass on detailed knowledge which may have taken years to accumulate, they cannot (usually) be simply allocated to a protégé and told to start mentoring! Similarly, protégés must invest time, trust and energy into their relationship with their mentor. Mentors confront, prescribe and dictate as often as they assist and support. For the relationship to function there must be at least a mutual respect from the outset.

One possible starting point for the establishment of mentoring relationships in the workplace is the identification of potential mentors among senior staff. Ideally, these people would be involved at a very early stage in the setting up of a mentoring program. Their support (by nature of their position) is likely to be essential to the allocation of resources required for the program. Also, if sufficient numbers of possible mentors are not available, the project should not go beyond this stage. What then, does a mentor need to be effective?

Consider the following in light of the earlier list of what mentors DO.

Potential mentors must have:

- *experience* and expertise directly related to the career of protégés;
- *time* to allocate to the mentoring role possibility of an open door policy for the learner;
- *personality* traits conducive to being perceived as approachable, non-aloof, of constant mood and relaxed;
- *exemplary work practices* and attitudes to work and the organisation (mentors also become role models);
- *highly developed communication skills;*
- *resources* to act as a sponsor and patron (influence and place in the organisation's power structure);
- *personal job satisfaction;*
- *ability* to demonstrate skills and procedures;
- *patience;*
- *no bias* toward specific groups (race, religion, gender);
- *sensitivity* to learning problems (motivation, anxiety, relevance, structure);
- *genuine care* for success and learning outcomes.

The assessment of these attributes would necessarily be subjective. No instrument has been devised (or could be) which could measure them reliably. This does not mean that they cannot be kept in mind when selecting likely mentors. They are, after all not too different from criteria used in many job interviews.

Following the identification of potential mentors, it is useful to attempt an analysis of the sorts of learning outcomes which justify the application of a mentoring program. These usually relate to the integration of elements of formal training programs and their transfer to actual job requirements. They can also be linked with aspects of jobs which are traditionally associated with 'experience': networking contacts, meeting and committee skills, adaptability to new situations etc. Without these selling points, potential mentors and other senior staff may not see a need to depart from normal practice.

Once the desired learning outcomes have been identified, it is probable that candidates for protégé roles will emerge from an analysis of the training needs. Not all formal training programs generate the same sort or number of 'gaps. A pilot mentoring program which targets evident occupational needs has a better chance of extending to other areas than one which is aimed at more intangible outcomes.

The final and most difficult operation is the matching and introduction of mentors to their protégés. It is absolutely essential that this is a voluntary process on both sides (Bova and Phillips 1981). Equally important is to ensure that both players see the advantages to each other in the exercise. Aside from benefits to the organisation, which should be self-evident, mentors should recognise the value of passing on their experience of components of the job which they may not often perform now, but are still a measure of their real worth to the organisation. Protégés should be aware of their increased potential and the considerable savings in frustrating trial-and-error learning which they might otherwise have ahead of them.

Once begun, mentoring (being informal workplace learning) does not lend itself to the cyclical and empirical evaluation which is so much a feature of formal training programs. It does, however, need to be monitored and adapted as change occurs around it. Mentors and proteges need to develop skills of reflection on practice. Mentors within an organisation need to meet regularly to discuss their strategies, progress and impressions. Protégés, like most trainees can benefit from keeping a reflective journal.

There is also the possibility that mentoring relationships can go quite horribly wrong. Bova (1987) cites Levinsons rather vivid picture of this scenario—'there is plenty of room for exploitation, undercutting, envy, smothering and oppressive control on the part of the mentor and for greedy demanding, clinging admiration, self-denying gratitude and arrogant ingratitude on the part of the recipient'. To protect against this it is advisable to have a third party who can intervene on behalf of protégés (at least).

It is worth a reminder that programs which seek to encourage informal and incidental learning in the workplace are not isolated from either adult or cognitive learning theory. Formal training programs remain the core of efforts to increase the productivity, competence, job satisfaction and career mobility of the Australian workforce. The fact remains however that such programs are often preparatory, and that the bulk of learning still occurs on the job. Theory and its associated research explore methods for improving traditional instruction by increasing learner participation and control, relevance, self-regulation and integration of course content with the application of that content. This chapter has outlined methods which address those issues, but in their natural habitat, the workplace.

Further reading

The following texts and articles are invaluable references for those interested in exploring further this important area of vocational education and training.

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Chapter 9

Intensive workshops

Hank Schaafsma and Laraine Spindler

As anyone involved with vocational education and training will be aware, the Commonwealth Government's (1990) policy aimed at increasing the quantity of training undertaken in this country appears to have been successful. As the authors of this chapter point out, the number of training workshops being run has increased exponentially over the last couple of years. What is less clear is their quality and their impact on industry. Little apparent thought, however, has been given to either the place workshops have within a broader training strategy, or the factors which need to be considered in estimating a workshop's value. These are taken up in the chapter. The issue of quality of training outlined in chapter 1 is an important background to this chapter.

The importance of using adult learning principles, a point raised in the introduction to this book, is echoed by Schaafsma and Spindler in their outlining of principles for designing a workshop. They give a series of detailed practical suggestions how this might be done including the often neglected area of budgeting and marketing. The warning concerning self-directed learning in chapter 5 should be considered when reading this chapter—particularly the difficulty learners have in accepting responsibility for their own learning. Ideas contained in chapter 9 on designing and running games and simulations could complement the design issues raised in this chapter.

The authors conclude by pointing out that workshops need to be part of a wider strategy for effecting workplace change—particularly where technology and information are expanding rapidly.

Introduction

The term intensive workshop has been defined here as: a relatively short term learning experience which deals

> *intensively with a single issue or theme by providing a balance between 'expert' input and learner participation. The major emphasis in a workshop relates to developing competence rather than developing knowledge about the issue being studied.*

Anyone who regularly receives glossy training brochures would be forgiven for thinking that the secret for developing the 'clever' society in Australia is found in the intensive, one-two- or -three-day workshop. Unfortunately, such workshops are rarely the quick-fix for bringing about significant change in people or organisations. Nevertheless, the marketing belief persists that workshops provide an efficient and cost-effective means for increasing the skills of the workforce. Workshops, however, need to be seen in a broader context of pre-planning and post-workshop follow-up to ensure that they produce learning outcomes that contribute to real change.

This chapter examines the place of workshops in today's training climate and then focusses on the process of planning and conducting intensive workshops. The first section of this chapter places the intensive workshop into the current training and legislative context. The second part of this chapter focusses on ways of increasing the effectiveness of workshops. Some adult learning principles underlying workshops are examined. In addition, some practical advice is provided for those wishing to organise effective workshops. A case study of one intensive workshop is used to examine the issues that are addressed.

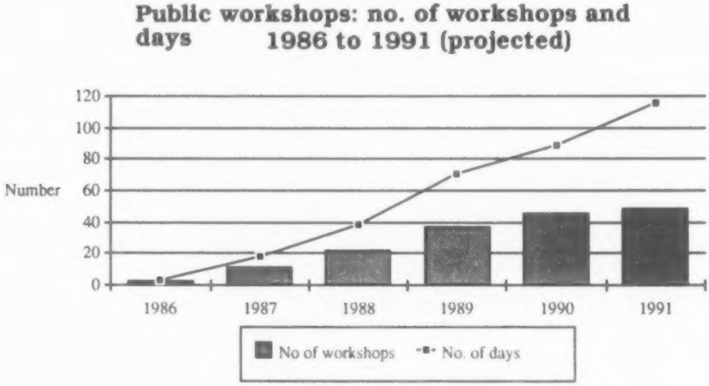
The context of workshops

The workshop should be understood in the broader context of what has gone before and what may happen afterwards. Too often the workshop is a stand-alone, one-off experience that temporarily leaves participants feeling good—until they return to a disinterested work-place environment. Within the contexts of restructuring, retrenchments, recessions and re-examination of the role of training in a changing organisation, it is imperative that the training function be integrated into both the human resource development (HRD) function and the strategic plan of the whole organisation. To achieve that goal it will become necessary for trainers to take a more active role in assessing needs and in negotiating the workshop learning objectives. The challenge trainers face is to meet changing organisational aims and diverse individual needs of clients. The design of workshop activities and their evaluation must be linked back to the workplace contexts in order to improve training practices. By building in some follow-up procedures that link the trainers to functional managers and supervisors in the workplace, it is possible to achieve the transfer of training goals implicit in the idea of a workshop as a training strategy.

The introduction of the Training Guarantee Act (1990) altered the meaning and importance of workshops in training. The intention of the training levy, under the training guarantee is, 'to increase, and improve the quality of the employment related skills of the Australian workforce so that it works more productively, flexibly and safely, thereby increasing the efficiency and international competitiveness of Australian industry.' (section 3 of the Training Guarantee (Administration] Act). The Act, in essence, invited a range of training providers to develop quality training activities on which training guarantee funds could be used. These training activities were expected to improve both quality and quantity of training—leading to eventual productivity gains for industry.

Trainers soon attached to workshops such terms from the legislation as 'eligible training', 'fee-paying' and, in some cases, 'accredited learning. These terms helped to associate the workshop with the idea of 'quality' in training without the benefit of critical appraisal or effective evaluation. From the trainer's point of view, workshops were a legitimate training strategy which could be used to increase training activities and they increased the use of the workshops for training . Table 1 illustrates that the number of workshops conducted on a fee-for-service basis (by one provider) has increased significantly since the introduction of the Training Guarantee legislation.

Table 1 : TDS Workshops 1986–1991



Evidence from training journals, promotional materials and newspaper advertisements suggests that a similar trend exists throughout the industry.

The recent growth in popularity of the workshop as a training strategy, can also be explained by the fact that the workshop format had benefits for three sets of stakeholders—management, trainers or vocational teachers and the clients.

For management, the workshop is a cost-effective way of meeting staff training needs. For management, the advantage of the workshop is that participants are selected and withdrawn from the workforce for only a short time period. This approach limits disruption to work. Coupled to this is the belief that the workshop will be able to develop those skills that can immediately be applied. Transfer of learning from the workshop is the expected outcome, even though this is subject to a range of conditions that is not always met in workshop design.

From the perspective of both trainers and vocational teachers, the workshop has become the most popular means for designing training related to restructuring in the workplace. Trainers and vocational teachers are increasingly given major responsibility for developing a multi-skilled workforce. Workshops allow them to provide a diverse range of training activities and to quantify to management what they have 'done' to achieve the goal of multiskilling.

From the participants' perspective, the workshop offers an attractive opportunity for demonstrating that they have multiskilled themselves in ways not easily assessed when longterm training qualifications are undertaken. Unfortunately, there is also a tendency in today's workshops, to distribute certificates (of attendance) as an end-of-workshop ritual, as if they represent some formal recognition of competence.

Part of the reason why training workshops have become such a major component of the educational and training industry in Australia is economic—more funds are available for training now. Data drawn from the ABS survey of employer training expenditure and analysed for the (Deveson) Committee by Pappas, Carter, Evan and Koop, indicate that public and private sector industry is currently spending some $1300 million per year on training (PCEK, 1990 p.17). Another part of the answer is research, or the lack of it. As yet there is little published research on the effectiveness of the intensive workshop as a form of training in achieving goals of 'improved productivity'.

In summary, the growing popularity of the intensive workshop can be explained with reference to the external needs of stakeholders; the availability of training funds; and the lack of critical research into their effectiveness. What is needed is a framework for placing the workshop in a wider training context and for critically analysing what workshops can and can't do.

Agency and structure in workshop design

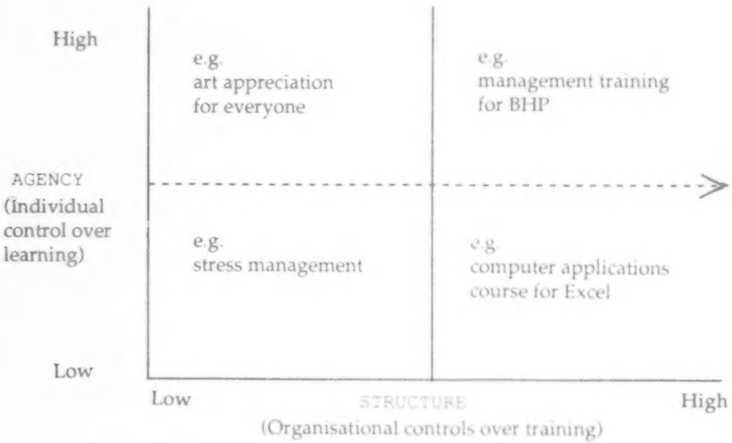
Ideally an intensive workshop is a group learning activity that ensures there is a negotiated balance between 'structure' and 'agency'. *Structure* in this context, refers to an organisation's need to control its training and HRD goals within the standards set by an industry. Workshops that are high in 'structure' provide limited opportunity for workshop participants to negotiate their specific learning needs. In contrast, *agency* refers to the degree of control that individuals exercise over their specific learning needs. Workshops that are high in 'agency' provide participants with real control over their learning.

These two concepts are also useful for classifying different types of workshops as well as critically examining their purposes and expected outcomes. They provide a way of examining the balance of content and process used in workshop design—between those that emphasise participant-directed learning and those that are pre-determined by the content and methods used.

The most common training workshop models derive from a perspective where learning is controlled by the demands of the employer or the organisation. For example, in a workshop on occupational health and safety, employees have little say in the 'content' or *structure* of the workshop. It is largely predetermined by legislation and company regulations. By contrast, a workshop set up by a community group that seeks to learn collectively how to make better use of the environment, will use an *agency* workshop model that is high in participation and self–directed learning.

What is proposed here is a simple 2 x 2 matrix into which intensive workshops can be classified on the basis of two variables of structure and agency.

Figure 1: A matrix model for classifying workshops


High
e.g.
art appreciation
for everyone
e.g.
management training
for BHP
AGENCY
(Individual
control over
learning)
e.g.
stress management
e.g.
computer applications
course for Excel
Low
Low
STRUCTURE
High
(Organisational controls over training)

This table suggests that the key to workshop success is sound planning that incorporates an appropriate balance between agency and structure. In reality, workshop designers find that various stakeholders exert different levels of power and influence over the workshop design. The tensions often by competing agency and structure factors have to be resolved through negotiation early in the design process.

The workshop is essentially driven by four sets of often competing needs. The first two represent the organisation's perspective and therefore focus on 'structure':

- *The needs of senior management* who exercise control over the expenditure for this form of training in the organisation.
- *The needs of accrediting authorities* who demand legislative control over the 'eligible' training for award restructuring.

The second set represents individual needs for 'agency' particularly in controlling the learning and teaching that occurs in workshops, e.g.:

- *The needs of the adult learners* who seek to have some control over what and how they learn, according to their needs.
- *The needs of the workshop leader (facilitator)* who has to negotiate between these competing needs on the basis of his or her competence and perceptions of which needs can be met.

Workshops can be designed to accommodate any combination of these competing needs for specific segments of a training market. For example, a one-day 'Manage Your Stress' workshop, offered on a fee-for-service basis, caters to individual needs and those of the workshop designer. By contrast, TAFE in NSW provides new part-time teachers with a free, three-day 'Basic methods of instruction' course. This course meets organisational (and union) needs as well as the basic needs of new teachers.

Where participants exercise a high level of control over their own learning (agency), certain adult learning principles will be paramount By contrast, where management seeks to impose controls over content and learning processes (structure), other adult learning principles may become operational. Each workshop therefore differs in the degree to which different adult learning principles are used to achieve specific learning outcomes.

Workshops and adult learning principles

Most trainers and vocational teachers are familiar with some of the constraints that derive from agency and structure factors. For this reason they design workshop activities that derive from a set of appropriate adult learning principles. Some of these principles are briefly examined here. According to Davis the list of these principles is long (e.g. see Davis 1974, pp. 19–26) and therefore it is more useful for workshop planning committees to identify which principles are most relevant to their workshop context.

In general terms, effective workshops:

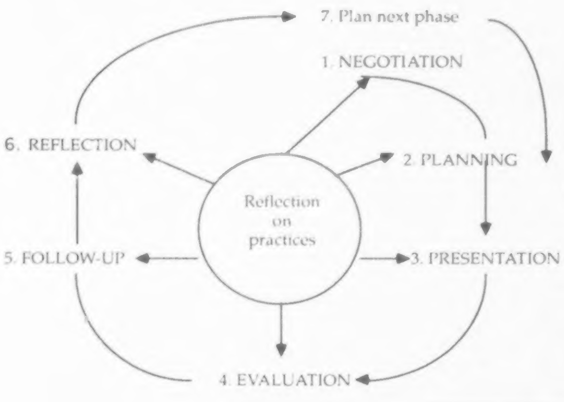
- *allow* adults to use a great deal of their experience;
- *are sensitive* to adult habits and individual differences;
- *have opportunities* to increase self-esteem;
- *ensure* that there is some self-direction for learners;
- *recognise* the physical (comfort) needs of adult learners;
- *provide* experiential learning situations;
- *are designed* for people who are willing to change, i.e. learn;
- *are built* on negotiation between the needs of the learners, expectations of employers and expertise of the leader;
- represent a balance between *structure* and *agency* in their design for helping adults to learn;

The implications for adoption of some or all of these principles may well be a significant departure from the dominant pattern of workshops that trainers or vocational teachers have used in the past. As the following section suggests, the new workshop model is committed to change, and to reflection-in-action.

The workshop planning spiral

Any workshop may be examined as a learning process in which there are at least six distinct stages in the learning-

Figure 2 Stages in Workshop Design



teaching cycle (figure 2). This extension model suggests that workshops must be seen in the context of a longer, on-going program of training and development. This process may first impact on the individual or it may be directed to the development of work groups, teams, networks and, ultimately, making the whole organisation into a 'learning organisation' (Pedlar 1985).

Trainers and vocational teachers, have traditionally focussed their energies on phases 2, 3 and 4 in the model, partly because what happened after the workshop was seldom their concern or their responsibility. In some of the excellent companies identified by Peters and Waterman (1986), the role of training and staff development became everybody's concern—not merely the trainer's.

It now seems that part of the reason why trainers in some organisations are perceived to have a low status position stems in part from the fact that they are unable to take direct responsibility for improving performance and effectiveness in the workplace. That is, they have limited power and control (or even time) to follow-up their training work or, indeed, to negotiate with management on what training should achieve—after the workshop. Some notable exceptions to this model are to be found in training practices of the NSW Water Board, Qantas, ICI and Arnotts.

What is offered here is an extension model of the workshop that suggests the need for monitoring what happens *before* as well as *after* the workshop.

Planning workshops: some practical guidelines

Some basic ideas about how to organise an effective workshop are presented. Each reader will need to adapt these guidelines to the specific and sometimes unique requirements of the workshop being designed.

At each stage of the process, there are opportunities for extending the traditional model by:

- reflection on practices; and
- planning follow-up strategies.

Stage 1: Negotiation

Clarify the purposes and the intended outcomes of the workshop

When it is decided that some training should be done the workshop organiser needs to ask a variety of questions to clarify the client's expectations. It is also important to establish with the primary client what can be accomplished by the workshop in the time suggested and with the expertise available.

Whether the workshop is being planned for an outside client or for internal purposes the following outcomes need to be negotiated:

- the behaviours, attitudes and understandings to be developed ;
- the level of competence expected. (The higher the level of competence needed the more activity and involvement will be required.);
- the wider HRD context for the workshop;
- possible follow–up activities in the workplace;
- the criteria and standards used in evaluating whether the workshop format is the most "cost effective" means of achieving the training goals.

Stage 2.: Planning

Using the framework to ensure that the workshop outcomes are achieved within constraints of time, resources and venue

There are a large number of activities to complete at the planning stage. These activities help to (a) identify specific needs and interests of potential participants; (b) identify the specific objectives for the workshop; (c) design and organise workshop content and activities; (d) choose an effective workshop format; (e) select the workshop venue; (f) inform workshop presenters; (g) estimate workshop costs and market the workshop; (h) complete workshop organisation details. These planning activities are briefly discussed below.

Identify the specific needs and interests of potential participants

The expected workshop outcomes should have been identified as part of the negotiation. Now it is important to identify the prior skills of the potential participants so that learning activities can be chosen that will most likely lead to the specified outcomes.

If the client groups (participants as well as their managers) can be identified ahead of the workshop, then it is useful to conduct an analysis of their learning needs. This will help to ensure any alteration in purpose, content or method that may be necessary in the light of the needs identified amongst the participants, can be included in the workshop design.

Strategies which may be used to do a needs analysis include: a short questionnaire, based on a choice of topics; group process (e.g the nominal group technique) with future participants; an open-ended survey plus group discussion; selected interviews with key opinion leaders or stakeholders; an analysis of competencies required for the (new) job, together with a skills audit of those for whom the workshop is designed.

For further information on how to conduct a needs analysis, consult some of the key references at the end of this chapter (e.g. Davis, Field, and Sork).

Where participants cannot be identified ahead of the planning process it is still useful to do a nominal needs analysis to identify potential participants, their characteristics and needs.

The success of the workshop may depend upon how well the needs and interests have been identified and used in designing and organising the workshop.

If the needs and characteristics of the potential participants cannot easily be identified then it is most appropriate to allow some time within the workshop to negotiate how to meet the needs and interests of those who attend. In this negotiation not all participants' needs can be met within the workshop. It is important for the workshop leader to make suggestions on other ways of meeting these needs outside the workshop.

Identify the specific objectives of the workshop

Traditionally, workshops began with the statement: 'By the end of this workshop/session, participants will be able to...' In today's climate of accountability for training (under the Act), presenters must look critically at what they can and cannot deliver within the limitations of a short workshop. More realistically, it may be useful to phrase objectives as:

> Participants will be assisted to achieve the following generic objectives: those dealing with acquisition of knowledge and information; those dealing with mastering of new competencies; and those dealing with the inculcation of attitudes, belief and values.
>
> For example, 'The workshop will assist participants to:
>
> - identify situations in which conflict resolution skills can be used *(acquisition of knowledge and information)*;
> - develop skills in conflict resolution in the workplace *(mastering of a new competence)*;
> - accept that when conflict occurs in the workplace it is providing an opportunity to solve a problem *(development of a new attitude to conflict)*.

Design and organise workshop content and activities

The range of learning and training strategies that are used need to meet workshop objectives. At the same time consideration needs to be given to differences in the learning styles found among any group of workshop participants. According to Kolb (1984) learning style preferences include activists, theorists, pragmatists and reflectors. The workshop leader needs to present a range of learning activities so that each preferred learning style is catered for during the workshop. The following range of activities do this:

- Concrete experiences to engage them in the learning process *(activists)* e.g. role plays, case studies, games simulations, interactive video.
- Reflection on those experiences individually or in groups *(reflectors)*, e.g. buzz groups, group discussion, response sheets, brainstorming.

- Search for generalisations and developing some understanding of the experience provided earlier *(theorists)* e.g. action research, reviews of documents and reports, Q and A, discussion.
- Developing and/or trying out any action plans that are derived from those generalisations and understandings *(pragmatists)* e.g. problem-solving groups, making action plans; conducting in-basket exercises; brainstorming uses in the workplace, simulations .

Ideally if the chosen activities meet all the specific objectives, then a coherent workshop emerges and is sustained throughout the workshop.

The following training principles are important in workshop design. How would you integrate these in the training workshop?

Training principles in planning workshops

Change the pace: select a range of activities as indicated above; vary groupings (e.g. self-paced, small group, large group); Vary the pace of the workshop about every 20-30 minutes.

Structure and plan group activities: use time efficiently; make that instructions clear; provide written instructions.

Rehearse a game , a simulation or activity ahead: see chapter 9.

Involve participants in presentations by assigning roles: e.g. summarise experiences.

Vary presentation formats: e.g. videos, guest lecturers, games etc.

Consider pre-workshop activities to make the most of the time available: e.g. pre–readings, gathering data or work information. When designing such activities be very specific about what needs to be done as preparation and what forms they should take when the participant arrives at the workshop.

Choose an appropriate workshop venue: consider size, location, facilities and cost.

Cater for the workshop: variety of tastes, light (not stodgy food), generous portions (successful catering adds to the overall estimation that the workshop is well organised and effective).

Brief external workshop presenters: objectives, context, clients, expected outcomes

Estimate workshop costs

If the workshop is designed on a 'fee-for-service basis', it is necessary to calculate a 'break-even' budget. That is, what is the minimum number of participants needed per day, to cover three sets of costs: (a) development costs; (b) presentation costs; and (c) on-costs. When in doubt, plan for as many contingencies as practicable. Where the workshop is in-house e.g by the company or training institution, there is still a need to budget.

Irrespective of what kind of workshop is planned, building your own checklist is essential. Here is one example that may be useful.

Table 2 **A budgeting check-list for a short workshop**

CATEGORY A*	COST	CATEGORY B*	COST
presenters' fees,		security	
venue hire		social activities	
catering		insurance	
accommodation		publicity/promotion	
transport ,		gifts and prizes	
printing / manuals		telephone calls	
mailing / faxes		travelling allowance	
a/v equipment hire		miscellaneous	
other expenses			
TOTAL		TOTAL	

*Category A is essential; category B may be optional for some.

When detailed estimates of all costs have been calculated it is time to establish a cost per person. This is calculated on the basis of the expected numbers who will enrol in the workshop against total costs. The purpose of this exercise is to establish if the workshop costs per person are comparable with similar workshops available in the market place.

In costing workshops it is important to give consideration to in-house versus residential workshops. Accommodation costs for workshops rise dramatically when they become 'residential'. Most presenters and participants would generally prefer the 'luxury resort hotel option', if it is available; but what are the real benefits? There is some research evidence to suggest that the long-term gains from residential workshops contribute to such objectives as team building skills, greater group cohesiveness and better communication skills within the organisation. Residential workshops also allow greater workshop design flexibility as the major part of the day (and some of the evening) is available for workshop activities. There are educational benefits for participants too. Opportunity is offered to the participant to give undivided attention to the workshop since work, home and daily travel arrangements concerns are reduced.

Marketing and promoting the workshop

In recent years TAFE agencies in Australia have recognised the need to raise awareness about the need to market TAFE as an institution as well as its wide range of courses and services. One outcome will be a greater emphasis on promoting and marketing short workshops that target specialised needs of industry and commerce. To do this effectively, vocational teachers need to develop a range of marketing skills that are part of the milieu of trainers in private enterprise. Below are included a few marketing considerations.

- *Publicise the workshop early so potential clients can plan attendance (and find the workshop fee if necessary).*

  Publicity brochures mailed out direct are often an effective means of promotion. However, only one in ten brochures usually brings a return so be generous with the number printed. The size of the print run is usually a minor cost.

  Publicity through other print media, e.g. newspapers and specialised publications (e.g. AITD, ACOSS, AIM, etc)., while appropriate, is not necessarily the most cost effective way of advertising. There are alternatives which could be explored, e.g. the personal 'grape-vine'. Personal contact with trainers or personnel sections of major employers may also be time well spent as this may lead to the workshop receiving some endorsement from these areas. The key here is using available networking skills to get the message out.

  Some free publicity may be obtained through appropriate radio stations and local newspapers by writing articles or being interviewed.

- *Organise an appropriate time frame for designing and publicising the workshop.*

  Time management and planning charts help to focus on different tasks and phases that sometimes occur concurrently. Table 3 illustrates how one workshop was planned, promoted, presented and evaluated.

- *Design an effective publicity brochure*

  Workshop brochures that are well designed usually provide adequate information and have an attractive format. Layout and colour are important (but expensive) aspects of the format. Do-it-yourself desktop publishing may be worth considering if the brochure is not too complex.

  When designing a brochure, gather and assess available publicity brochures that have effective formats. Whatever decisions are made about the format, the following information should be included on the brochure:

Content of the workshop brochure

Content
Title of the workshop
Workshop Presenters
Target groups
Date of workshop, starting and finishing times
Objectives of the workshop
Planned activities, guest speakers
Program outline

Administration
Workshop venue
Contact person; phone, fax and address
Cost of workshop, including Deposit and cancellation fees closing date for payment
Where payment should be sent and preferred method

Finalise workshop organisational details

Most of the planning of the workshop has now been completed but the work does not stop. About two weeks before the workshop is to be presented a number of things should be checked. These include (a) confirm the booking of the venue and the equipment being supplied; (b) finalise the numbers attending ; (c)check the caterers, if you are having any; (d) ring presenters and organisers to remind them of the dates, times and any final arrangements , accommodation, transport, etc and follow up with a letter confirming this; (e) send out a letter to workshop participants confirming arrangements and include any workshop pre readings.

Prepare materials and equipment in advance. If time permits, organise some materials and equipment (paper, pens, name tags, displays provided by sponsors or the client). Although small in cost, these add much to the sense that the workshop is well prepared.

Stage 3: Presentation

When all pre-workshop organisation has been done and everything has been checked ahead it is often the expectation that all will go well. However this is often not the case. On the day there are a number of potential problems to be watched for. Such things include :

- check that all equipment is there in good working order;
- organising presenters and monitoring their progress;
- ensuring that presenters are properly introduced and thanked afterwards;
- keeping to the time schedule;
- checking that catering is ready when participants (and you) need it.

Presentation skills for workshops cannot be learnt from a book: they need to be practised and evaluated either by yourself or a 'critical colleague' who can provide the constructive feedback that is needed. For workshops that are offered on a fee-for-service basis, the bottom line will be the request for a 'repeat performance'. For all workshops, evaluation data will provide the feedback.

During the workshop use a check-list for monitoring:

- *The presenters* and what is expected of them (a specific brief)
  Is their presentation style appropriate to this audience?
  Do their session objectives match those of the workshop?
  Do they incorporate appropriate adult learning activities?
- *The content* and the activities chosen (reflect what was planned)
  Is there a balance between theory and practice?
  Are the written hand-outs to be used appropriate?
- The feedback to the presenters (used to identify who can best help you achieve the essential goals of the workshop).
  Would I use this presenter again?
  Were group leaders/ presenters adequately briefed?
  Did they enjoy the workshop as a learning experience?

In conclusion, the presentation of a workshop is not a case of 'stand up and deliver—as is so often occurs at conferences and seminars. Effective workshops are built on adult learning principles that begin with the learner's need to know and end up with the learner taking some control and responsibility for further learning in the workplace.

Stage 4: Evaluation

Learning outcomes from any kind of workshop should be monitored during and after the workshop, to check that the intended outcomes of each activity are achieved. Evaluation data is not only for the benefit of the workshop planners and presenters but ideally it should provide feedback for the clients and the participants. Evaluation is necessary if there is to be continuous improvement.

Workshop evaluation strategies should also include follow-up activities which will ensure that any intended changes in participant behaviours which are to result from the workshop do transfer to the workplace.

Evaluating the workshop is a shared responsibility and this may be negotiated with the participants from the beginning. There are usually three aspects of any workshop that need to be evaluated:

• *The learning outcomes*	what did/didn't we learn?
• *The workshop process*	how did/didn't we learn?
• *The presentations*	why did/didn't we learn?

In conclusion, it is worth reiterating that evaluation of the workshop should not be confused with the ritual of producing 'smile sheets', which are the questionnaires designed to make the presenters feel good. Evaluation of any workshop must be done in a broader context of what this training contributed to the organisation's goals and to what extent it met the client's needs.

Stage 5: Follow-up action

Consider if your workshop has been designed to provide follow–up experiences set in the workplace, then you will need to list three additional objectives using the following stem.

After returning to their workplace, participants will be able to:

- *use* an action plan process for implementing the learning outcomes of the workshop;
- *demonstrate* how they plan to transfer learning from the workshop to their workplace (site);
- *evaluate* the relevance of the workshop content in situ to colleagues

There are at least eight components that could be included in a checklist for the workshop follow-up phase.

Table 3 : A checklist for the follow-up phase

ACTIVITY	WHO DOES WHAT?	WHEN?
Assessing needs on site for follow-up	Questionnaire / Interview ( )	
Writing new objectives	Session planning for on-site visit ( )	
Selecting the sample for telephone interview	Consult with managers ( )	
Designing evaluation on the job	Check Jones & Pfeiffer, for examples ( )	
Reviewing action plans	Time and staff meeting	
Making arrangements for the follow-up visit	Another check-list ( )	
Monitoring or measuring performance	Video-tape a session ( )	
Packing the materials for follow-up meetings	Booklets, brochures etc. ( )	

Stage 6: Reflection

Throughout this chapter we have emphasised the importance of asking key questions about each of the six stages of the workshop model (figure 2). Reflection is a normal part of our professional lives, but we believe it can be made more constructive through the conscious use of focussed questions.

A great deal of information is now available on the value of reflection to improve practices (see Boud et al. 1987; Schön 1987, 1989); finding time to use these skills is perhaps the biggest challenge facing vocational teachers and trainers. Rather than link reflection to the evaluation stage of a learning cycle, we have suggested that reflection can form an integral part of the workshop process, at every stage. For many people this represents a change from what they may have done in the past.

If learning represents a change in behaviour, then it will be argued that developing our facility to become 'reflective practitioners' is indeed a major goal of all workshops. Reflection is not navel-gazing—it is the outcome of interaction between workshop participants and presenters at each stage of the planning spiral.

The purpose of the evaluation is to collect data to improve the workshop, next time. The purpose of reflection on practices is to come up with answers that will make it happen. The outcome from reflection on practices is an extension into the second phase of the workshop spiral where the whole process of negotiating, planning, presenting, evaluating and reflecting begins again. If, after reading this chapter you feel that you've got it; remember, the perfect workshop has not yet been developed. This can now be illustrated with an example.

A case study

Preamble

The role of reflection in a co-operative inquiry of this nature has presented the authors of this chapter with an experiential dilemma. How can two authors, with different workshop experiences 'make sense' of their reflections on practice? Obviously the outcome will be a variety of modes of theorising as Boud et al. (1985) suggest. To illustrate this, the following case study is used to theorise on reflection in workshop practices.

The account of this case study was written as a journal during 1990 by one of the authors. The data that were recorded covered the stages of negotiation, planning, presentation, evaluation and follow-up of a new workshop. What follows is an edited version of my reflections on the workshop practices.

This case study has illustrated the need to look beyond the workshop as a two-day panacea for solving complex training problems such as managing change. Trainers and vocational teachers need the skills not only in planning and conducting the workshop but also in ensuring that the outcomes meet the needs of the clients—this means better marketing and evaluation skills and a commitment to quality.

The case study

Prior to the workshop being presented, there had been a development phase as well as a marketing phase. In summary, this workshop was marketed to provide new management tools that could be used by various levels of management *'to facilitate the implementation of changes and innovations in our organisation'*.

The client for this workshop was a large, public utility that sought the introduction of a new communication process called 'Team briefing'. The title of the workshop became, 'Implementing team briefing through concerns-based networking' (CBN). The planned two-day workshop would provide managers with change–implementation skills to make team briefing operate more successfully in their region.

Negotiations

Negotiations for conducting this workshop involved the following stakeholders—the regional manager, the district manager, an outside consultant (marketing specialist) and the CBN workshop presenter. On reflection, this phase of the process illustrated 'structure' elements, viz. the role of management in assessing needs—often without substantive data. On the other hand it raised the ethical issue for the consultant of *meeting the perceived needs of the client*, without a needs analysis.

That is, negotiation from the presenter's perspective was primarily perceived in terms of 'promoting' a product to management. Once a decision had been made to adopt this workshop format, the next marketing phase focussed on determining the need for an augmented product (consultancy, training manuals, specialised course development and evaluation research). It is interesting to note that neither the HRD manager nor the training manager were involved at this stage of negotiation. The workshop became an instrument for facilitating change from the top downwards, thereby fitting in with the dominant cultural pattern in the organisation.

Planning

In this case no formal needs analysis was possible because the workshop was designed to address organisational needs that had already been specified by management, viz. the problems with implementing total quality management (TQM) principles among front-line managers.

Planning did involve a considerable amount of familiarisation with the organisation, its systems, its culture and its many different levels of management. As part of my induction into the organisation I was able to draw on one internal 'consultant' who showed me around and acted as a 'translator' and guide. One outcome was the recognition that the workshop had to be extensively re-designed to suit the changed context as well as the new clients. Planning meant compromises.

On reflection, the single most important message that came through was *'keep it simple'*. As a university-based researcher, I had developed a language register and style quite inappropriate to the needs of industry. The teacher had to become the learner again! The KIS (Keep It Simple) principle of program design dominated all aspects from the re-design of the overhead transparencies to modifications to the planned role plays.

Presentation

Presentation of the workshop was built on several adult learning principles. (a) *keep it practical*—i.e. make it experiential and relevant to their experience; (b) *make it interactive*—so that everybody could participate; (c) and of course *keep it simple!* The workshop manual was re-written, at least three times!

On reflection, the workshop attempted to do far too much. In reality, we attempted to cram five days' work into two days. Participants enjoyed the course but suffered from information overload. One of the most common mistakes of all (new) workshop presenters, is that they attempt to present too much in the time available. Effective workshops must have realistic objectives. More means less.

Evaluation

Evaluation was based on a 'happy sheet' instrument that provided empirical data on a five-point scale. These data were submitted to senior management as positive indicators of the success of the workshop. Perceived success in a workshop is, however, a poor predictor of changes in performance (implementation) in the workplace!

In reality, there was considerable confusion after the first workshop because many participants were afraid to admit that they couldn't use the materials. Control over learning outcomes was not part of the culture.

On reflection, the missing link for this workshop was field-based follow-up and support of the action plans. If trainers have the opportunity to follow-up on their training either personally or by means of a 'recall workshop', there is greater likelihood that real behavioural change will follow.

Follow-up

Action plans were constructed, evaluated and reviewed prior to each participant leaving the workshop. The theory was sound but it did not work as expected. Implementation is a complex change process and is dependent upon effective networking between the change planners (head office managers), the change facilitators (the trainers and the district managers) and the end-users in the field.

On reflection, structured follow-up involving workplace monitoring was seen to be critical for measuring changes in performance. To that end, several site visits were made to see the teams in action.

One outcome for the workshop participants was the recognition that workshop skills were transferable but that workplace constraints often made real change very difficult in practice.

Reflections

The feedback from workshop participants in the field provided insights and explanations for the incomplete change. These included:

- Workshop facilitators have learnt to establish networks with their clients and with key managers. The networking style used, shapes these networks and links the successful implementors of change.
- Follow-up of workshops, as part of an extension training model needs to be collaborative and interactive. Ideally this is based on trust, which takes time to develop. Trainers must link up with clients afterwards.
- The workshop is part of a staff development process and therefore workshop leaders must know what has gone before. Every change has a history. The workshop is merely a small link in a long chain of learning experiences.
- If the long-term goal is real change, then the workshop can only be a signpost along the road.

Conclusion

In this chapter we have attempted to provide some theory as well as some guides for improving workshop practices. In the context of massive changes in industry, there is expected to be a greater demand for workshops that work. Too often managers as well as participants find that the workshop did not meet their needs or the workshop provided no clear link to the world of work.

This chapter has been designed for those TAFE teachers and industry-based trainers who are seeking to bridge the gap between the classroom and the workplace. Developing training strategies around the concept of a workshop provides an opportunity and a challenge to achieve limited objectives that can lead to long-term learning.

Workshops, no matter how well conducted (or how expensive), are not a panacea; they cannot instantly solve problems of productivity, sexual harassment or poor financial accounting procedures. What we have presented is an extension model of workshops that emphasises the need for the workshop developers to work with clients before and after the workshop to find a balance between competing needs of the classroom and the workplace.

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Chapter 10

Learning through play: simulations and games

Elizabeth Leigh & Hank Schaafsma

The benefits of using games and simulations, a variety of experiential education, are outlined in this chapter by Elizabeth Leigh and Hank Schaafsma. It is suggested that the capacity to cooperate, the taking of personal responsibility and the ability to reflect on experience —all capacities needed for the clever country as chapter 1 argues—can be developed using games and simulations.

In this chapter, the authors present a series of practical and theoretical issues which need to be considered before a decision is taken to use these learning strategies. The points raised here reinforce those made in other chapters particularly the need for effective planning and evaluation strategies raised in chapter 2. In addition, in outlining the methods of presentation the point is made that teachers need to take account of institutional realities (as Foley points out in chapter 5) and their own values (Scott, chapter 2). Teachers have less control using these teaching strategies and must be able to tolerate ambiguity and be prepared to experiment with some of Scott's key adult education competencies. While this means that such strategies can be threatening at first, there will be many rewards in using them for both students and teachers whether in traditional vocational education classrooms, or in specialised workshops.

Introduction

The TAFE college caretaker—outraged at the disarray in the woodwork room—was no match for the welfare certificate students, perched precariously on top of a pile of carpentry benches. They were deeply involved in planning their survival in the midst of a tropical cyclone—and were not inclined to accept interruptions from an irate outsider who was standing—in their scenario—twelve feet underwater!

Health and safety procedures are essential aspects of grain storage fumigation programs. But they can also be boring and remote from reality when presented in a comfortable classroom. However, the 27 country students, in a conference room in Sydney, showed no signs of boredom as they raced to identify their equipment needs, schedule their staffing roster and calculate dosage rates for an entirely fictional grain store.

Each of these events is a snapshot from a simulation or game. The first section describes events in a simulation focussing on welfare disaster relief. The second describes a 'relay race' game revising key skills and knowledge concerning grain fumigation procedures developed in Australia, for use in Africa.

In this context a simulation is an open-ended activity with the focus on identifying the range of behaviours applicable in a given situation. Because simulations are oriented towards representing real-life situations, they need to be based on *adequate research* as well as *appropriate sampling* from real life, so that an examination of the processes involved is reality-based. Simulations not only help to reflect reality, but they also enable participants to re-construct reality. In this sense, simulations may be seen as a form of grounded theory building, where the journey is more important than the destination.

By contrast, games are different from simulations in three major aspects. Firstly, they are more limited with regard to time and they are rule oriented and rule driven. Secondly, games involve some form of scoring with an emphasis on the more overt aspects of competitive activity. However, it should be emphasised that all games need an initial level of co-operation which must exist as a pre-requisite for future competition. Thirdly, games are outcome-oriented, in that participants are primarily interested in what result is achieved; the destination is more important than the journey. Games represent an aspect of probability theory where chance is concerned, but they are seldom designed to build a new theory, though this is possible.

Both games and simulations are examples of experiential learning. While it is acknowledged that these terms are used on various ways (Weil 1989), what both have in common is a valuing of learning which arises from the first–hand experience of the learner.

This chapter briefly examines the theory that informs the practice associated with effective gaming and simulation. For this reason it begins with the fundamental question of why use simulations and games in adult education and training? The bulk of the chapter examines the more practical questions: how? what? when? where? and who should be involved? To illustrate how both theory and practice need to be integrated, the chapter concludes with a simple game that can be adapted to most situations to produce effective learning outcomes.

Why use simulations and games in training?

While post-secondary educational institutions have largely ignored the learning opportunities available through simulations and games, others have welcomed their capacity to represent reality and assist in planning for contingencies which cannot yet be imagined. This section provides suggestions on why such activities might be used in preference to other forms of experiential learning such as excursions, experiments or action-oriented research.

For planning, contingency forecasts, assessing skill

Military establishments have used variants of the simulation process for several centuries to plan their campaigns. In industry, a variety of computer-based simulations are now available for management to review their strategic planning, accounting and organisational skills and consider future needs. The flexibility and relative simplicity of the processes involved has made simulations and games a most acceptable alternative for developing contingency plans, measuring effectiveness of equipment and people, assessing readiness for action and evaluating leadership and planning skills. While development costs are high, a flexible simulation will generally gain high acceptance.

For play, fun and creativity

The pleasure and enjoyment which children gain from playing games is available to adults in most of the simulations and games which are described in the books listed in the bibliography. Simulations and games offer the opportunity for learners to enjoy what is being learned by utilizing their experience interactively. In addition the element of 'play' adds to the potential for creativity in analysis and can assist learners and teachers to find new ways of seeing the familiar.

Honey and Mumford (1985) have alerted us to the implications of learning styles for group participation in these and other activities. If games and simulations are designed for action, interaction, problem solving and other kinds of activities, it would appear that this would thereby exclude those persons whose learning style tends towards the reflective or theorist dimensions of learning. However, an effective game or simulation makes provisions for all styles of learners by providing a range of roles, rules and reactions, to cater for individual differences.

Furthermore, observations about learners' preferred approaches to learning, may also be reflected in the way teachers and trainers choose their preferred teaching styles. That is, TAFE teachers and trainers who do not find games and simulations welcome strategies may be making their choices based on their own experience of how they have learned and not extending their own styles to encompass wider expectations about how adults learn. It is likely that part of this stems from a perception that learning is serious and mixing it with 'fun' is not appropriate. These and other issues are examined in greater detail in the final section of this chapter.

For experiencing, practising and trialling

A Sioux Indian prayer asks: "Lord before I judge anyone, let me walk a mile in their shoes". In simulations and games we have a tool to provide the answer to such a prayer. The widely used simulation, *Bafa Bafa* was originally developed to assist sailors in the US Navy's Mediterranean fleet experience the sense of loneliness, fear and bewilderment which can be part of visiting a country where your language is not spoken. This particular simulation assists in the development of cross-cultural insights through a probing of underlying beliefs and values. Experience shows that these seldom surface in the more traditional tutorial or discussion groups on the same subject.

Games and simulations can in fact be adapted for a wide variety of uses. For example, *Bafa Bafa* has been adopted by welfare and health agencies in Australia to provide a similar experience for their staff who are working in, but are not part of, non-English speaking communities. This is perhaps one of the more spectacular examples of simulations and games providing the vicarious opportunity to experience someone else's life. Other examples of simulations which enable such vicarious experiencing, are 'Poverty' and 'Tower Power'.

The opportunity to trial problem-centred behaviours in a low threat setting is another aspect of the learning offered by simulations and games. One player, knowing she was about to become a sole parent, chose the role of 'father' in a simulation specifically because she wanted to 'feel' herself in the role to consider whether her behaviour would need to change.

'Customer Service' training uses a variety of role-play based simulations and games to enhance the skills of participants. When participants have been 'abused' by friends in an artificial setting and learned to take a deep breath and collect their thoughts before answering, then they have begun to develop a presence that will not be unbalanced by rude and irate customers.

Reviewing skills and knowledge

Simulations and games provide a means of reviewing skills and knowledge which is more diverse and involving than any form of test or assessment. Use of a game format such as Sale of the Century enables trainers to introduce an element of fun into routine learning by using all the key elements of simulations and games. While a first year TAFE electronics class may normally expect a multiple–choice test at the end of term, consider the impact on their motivation to learn, if this was transferred to a game adapted to a reward-driven test format!

One way to do this would be first to develop the key content information into questions, then arrange the class into teams and have someone act as Master of Ceremonies. The MC asks questions of each team in turn and the teams work together to provide their answer. Be sure to have a prize for the winning team that is commensurate with the learning outcomes.

Trivial Pursuit has also had wide public appeal as a method for reviewing (trivial) knowledge but its format has the advantage of being endlessly extended and revised so that players do not get tired of working through what can otherwise be 'boring, irrelevant' facts. Recently, a group of teachers in an Aboriginal community developed a version containing data about their community and the surrounding landscape. They stopped adding new items when they reached 1000—but could have continued. They found that the game, and the interest it sparked, got the community involved and encouraged children to collect, revise and discover new data. Learning became an exciting, living part of their surroundings—because of a game.

Such formats provide a simple introduction to learning, because of the wide understanding of how the game works. It is quite possible to develop a Trivial Pursuit assessment game around almost any standard teaching topic. Used within the limitations of revising facts and basic information, it helps focus student attention from the beginning of a topic. Using this format, learners can also help to construct the game.

Transfer of training

In industry, games and simulations are also expected to transfer to the real world, beyond the training classroom or the staged outdoor setting. Transfer of training does not happen automatically because the game or simulation worked. Nor do 'aha' experiences readily translate into changes in beliefs, values or attitudes. Transfer of training, as a psychological concept, needs to be planned for, and built into the post-game follow-up. There needs to be a close link between the trainer or TAFE teacher and the learners who work in the real world and have to apply the learning.

A recent text on management games notes that

> *There is a world of difference between knowing that something is true because one has been told it by some authority and knowing that it is true because one has experienced it… for oneself'*
>
> (Elgood 1990 p.17).

In less personal learning modes (such as lectures and discussions) it is always 'someone else' and 'some other moment in time', that is involved in the information being delivered. In simulations and games it is 'myself' who decides to act, (based on what is known), and immediately receives the results of the action.

Above all else, simulations and games ensure that learners cannot escape from the consequences of their actions. On the other hand they are assured of learning in a forgiving environment—one that is self-evidently temporary and benign.

When in doubt—don't!

Each section above has highlighted a reason for using a simulation or game, in preference to a more traditional teaching strategy. There is, however, one final point to make about the decision to use such an activity in any learning program. They are magnificent, exciting learning tools when you are ready for them. They are merely frightening, difficult time–consuming activities when you are unready. The trainer or TAFE educator needs to do a simple cost-benefit analysis before adopting any game or simulation.

This section has outlined a range of reasons why games and simulations should be used. No doubt these assertions will challenge readers to provide alternative reasons why games and simulations should not be used in a particular environment.

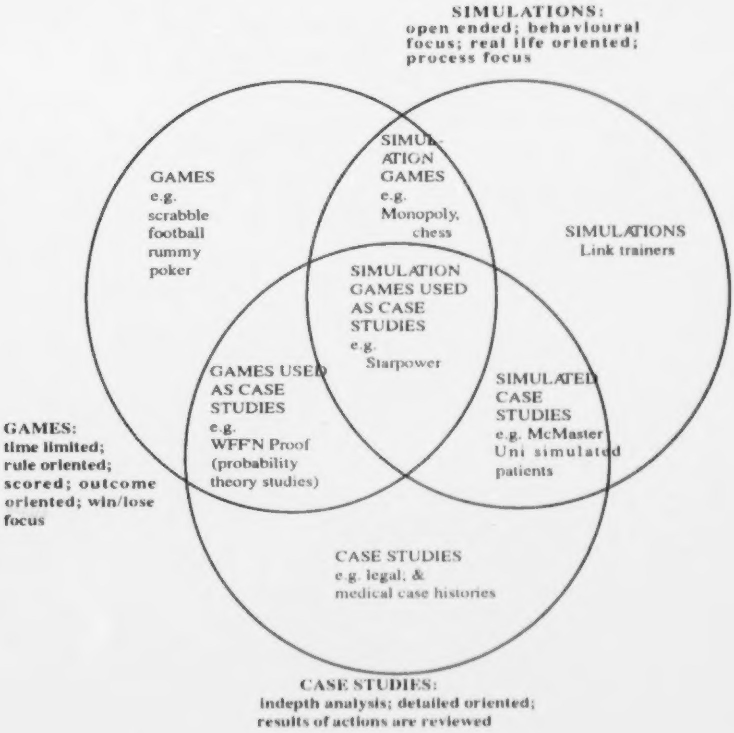
How to conceptualise games and simulations in adult education

Common to both examples, described in the Introduction, is the fact that the people involved were clearly enjoying the activity and experiencing a degree of involvement that no static learning situation could have generated. This then brings us to the question of how to conceptualise games and simulations. Figure 1 provides a simple Venn diagram that shows the commonalities in games, simulations and case studies. The commonalities will be discussed in this chapter.

This set of intersecting variables suggests that there are commonalities in games, simulations and case studies—at the descriptive and functional levels. Perhaps what is more significant for trainers and TAFE teachers is their reliance on the facilitator. The development of effective skills in facilitation is a critical pre-requisite for the use of games and simulations.

Teachers of adults, in work settings or at TAFE colleges, have many opportunities to use experiential activities, such as simulations and games, to enhance the learning environment in their classrooms. Unfortunately, much of their own training has focussed on the presentation of lessons, rather than on the most effective means of facilitating the learning of adults.

Games and simulations do not claim to be replacements for effective lectures or demonstrations. They are, however, powerful tools that can be used, when and where appropriate to provide a vicarious experience of what is being spoken about in objective, fact–giving sessions. The challenge, for educators, is to learn how to provide effective experiences which do achieve opportunities for gaining insight into aspects of other peoples' lives.


SIMULATIONS:
open ended; behavioural focus; real life oriented; process focus
GAMES
e.g.
scrabble
football
rummy
poker
SIMUL-
ATION
GAMES
e.g.
Monopoly,
chess
SIMULATIONS
Link trainers
SIMULATION
GAMES USED
AS CASE
STUDIES
e.g.
Starpower
GAMES USED
AS CASE
STUDIES
e.g.
WFF'N Proof
(probability
theory studies)
SIMULATED
CASE
STUDIES
e.g. McMaster
Uni simulated
patients
GAMES:
time limited;
rule oriented;
scored; outcome oriented; win/lose focus
CASE STUDIES
e.g. legal; &
medical case histories
CASE STUDIES:
indepth analysis; detailed oriented;
results of actions are reviewed

What modes of presentation are used?

Games and simulations may be presented in a number of different ways. This section outlines some of the more common models used to present them and which techniques that are most effective.

Board games

One of the oldest games still played today, is *Bao*, a favourite of men in southern Africa. It appears to be a descendant of a board game depicted on the walls of an Egyptian soothsayer's tomb in the ancient burial complex at Giza . It has some of the characteristics of more familiar games like *Steeplechase* and *Monopoly*—combining chance ability and the excitement of competition. They also teach numeracy skills and strategic thinking.

Other board games, with long histories, and still providing learning and fun today are *snakes and ladders* (originating in India nearly 2000 years ago as a lesson on Hindu morality) and *chess* (also Indian in origin and representing two warring princes). Such entertaining board games help in the learning of *strategic planning, analytical thinking, morality, numeracy skills* and the relationships among chance, skill and luck—all of which are useful for your survival in your organisation.

Role play

Role play is both an experiential and an experimental process. As children we probably experimented with familiar situations such as *doctors and nurses* or *school teacher* to help us learn more about the world we were experiencing.

When used as a learning technique with adults role play provides a means of trialling possible behaviours in specific settings. Participants are able to receive feedback on their performance, well away from the more critical observations of real life patients or customers. Unlike board games, role play requires more display of 'self' in a public setting, and can be more threatening for this reason. But like the children's' games, it can provide a 'fun' setting in which the experimental process is easier to tackle, and the learning is easier to absorb.

Case studies

Case studies are a comparatively modern device, being used extensively at the Harvard Business School from the early 1930s. They have been described as 'true stories in which the names have been changed to protect the guilty'. In essence they are detailed descriptions of an event—or series of events—with the ending withheld from the players, whose task it is to use the available data to develop their own solutions to the problem as stated. The solutions developed can be compared and discussed and the true story outcome may also be presented and discussed later.

In–baskets

Originally these were developed for purposes of management training and performance appraised because they were designed to measure a person's ability to (a) prioritise problems, (b) handle non–routine, and (c) routine administrative matters. They may be conceived as a simulation of 'A day in the life of a trainer'.

The in–baskets or in–tray represent the set of hypothetical problems and issues that a trainer (or training manager) might face in any one day. Letters, memos, brochures, faxes, circulars and policy documents could be placed in the tray. The main advantage of this approach is that it can be tailor–made for specific clients and so be reality–based. The disadvantage is that it takes a lot of time to set up and evaluate. With some imagination, the production of in–basket items could itself become a useful learning experience for a group. The learning outcomes from in–baskets can be carefully pre–structured.

Hypothetical

'What if you were the prime minister and had to develop a policy on stimulating companies to improve their training what would you do/ say?'

The most popular model for the hypothetical is the TV show hosted by Geoffrey Robertson QC. He sets the scene initially and gradually weaves an increasingly more complex scenario by adding in new people (e.g. trade union represen=tatives) or new issues (a recession happens) or new problems (the legislation has loopholes) etc.

To conduct hypotheticals requires considerable knowledge of the topic/subject in question prior to the main performance. As a group activity (in front of an audience), it can provide exciting experiential learning—if the participants play their parts well.

The outcomes of any hypothetical are uncertain because the facilitator or leader can take the group into many alternate directions. Hypotheticals are useful in courses where there are open–ended learning outcomes that relate to values, beliefs, attitudes and ideologies.,e.g. the introduction of EEO or a non–smoking policy.

A warning. Don't try to conduct an Hypothetical unless you have (a) plenty of self–confidence, (b) know the participants, and (c) have carefully briefed them on their role. After that anything can happen!

Simulations

Simulations range from highly complex representations of multi-layered aspects of reality to simple activities which may take only a few seconds to explain and require nothing more than pen and paper. They usually involve participants in a series of interactive events which represent reality—while not being real.

Technology–based simulators

Technology–based simulators include a wide range of equipment. The Qantas aircraft simulators at Mascot in NSW are an integral part of all pilot training, and are in use 24 hours a day.

Other mechanical simulators include the Australian navy's system which presents sailors with the frightening detail of a sinking ship. In more general use are the driving simulators used when preparing for the driving licence test.

What range of activities is used?

These described modes of presentation are frequently amalgamated to form the wide range of simulations and games which are available today. Table one displays a method of arranging them into a linear sequence, based on their facility for arousing emotional responses to fictional settings.

TAFE teachers and industry trainers have considerable freedom of choice about teaching style. It is always an individual matter to decide on the most appropriate level of involvement.

Table 1 : A spectrum of simulations and games: arranged according to their degree of involvement

	TYPE	CHARACTERISTICS
LEAST EMOTIONALLY INVOLVING	Case study	Observations of the real world.
↑	In-basket or In-tray	Non-interacting, one-to-one representation
│	Incident process (or action maze)	Interacting one-to-one representation
│	Hypothetical	Formally structured group portrayal using one-to-one interactions
│	Machine simulation or computer simulation	Data and decision processes embedded in mathematical representations.
↓	Role playing	Informally structured one-to-one or group portrayal
MOST EMOTIONAL AND HIGHLY INVOLVING	Gaming simulation or game-simulation	Structured group representation

Based on the work of John Taylor (1977)

Case studies, 'in-baskets' and action mazes are closest to real–life activity, but are less likely to involve personal emotions or generate heated interactions. Simulations and role plays are less 'real' but have a high potential for generating involvement. The choice of activities must, in part be made with regard to the degree to which you, the 'games director' are prepared to manage, and adjudicate, highly emotive situations.

In considering which one to use you will find that most of the activities described by Scannell will generate fun and learning without too much heat. In contrast Christopher (1987) emphasises the complex nature of many simulations and games and describes some specific situations which have had tense moments.

When should games and simulations be used?

The following tables suggest questions to use when considering whether to use a simulation or game. There are many occasions when such an activity is not appropriate—and just as many when it could be an inspired choice for encouraging learning. The choice is yours as leader and teacher.

In selecting a simulation or game you will need to have the courage to give up your more usual notions of classroom behaviour. Players will be noisy, provocative and unpredictable. Your role must be that of referee. And just like a sports referee you can only observe the run of play and enforce the rules—you cannot control the direction the play takes!

Table 2: Practical issues

1	Do I have enough flexible time?	Players seldom comply with prior notions of timing—especially when the game is open-ended. Flexible scheduling tactics are vital.
2	Do I have enough of the right materials?	Murphy's Law definitely applies in games! Always have more than you need and check that everything you need is complete—and be prepared to find that it is not—when the game begins.
3	Do I have the right setting?	Clear, open spaces and mobile furniture are always best. Plenty of room is essential. Don't play games next to the principal's office while s/he is in residence—unless you have given everyone plenty of warning, and there is no alternative. Simulations and games can be very noisy!

Table 3: Theoretical issues

1	Do I know what the game can do?	Practice and personal experience are the best guides here. Discuss your needs with those who are experienced. Do a 'walk through' practice: think about yourself in each role. Handle all the materials. But most of all try and let your imagination fly—because the real issue here is: 'What can the players do with the game?'
2	Do I know what I want the game to do?	One game can do many things. And many games can achieve the same objective. It is critical to know clearly, what direction you wanted it to pursue—even if the players do take it somewhere else!
3	Is my purpose still relevant to the group's learning—as the time to begin approaches?	Some games continue to be apt, regardless of the development of the groups' learning. Others become simply irrelevant—or even counterproductive. When you are near the time to begin, check again—and have a standby ready—just in case. NEVER proceed just because it is 'in the program.'

Table 4: People as participants

1	Are the underlying cultural values and norms acceptable to the players?	Games are designed by people who have absorbed the values and norms of their own culture. Often they are able to design games compatible across many cultures—often not. Read the game material carefully to assess the extent to which materials and concept may need to be amended. If there is too much amending required—select a different game.
2	Are the players ready and able to gain learning from the experience of a game?	This is a matter of 'readiness', with all the attendant problems this implies. Successful use requires caution and care. Proper briefing can enhance group readiness—use this step carefully.
3	Does the games concept—and the theme of the chosen game suit the organisational ethos?	Some organisations are attuned to experience-based learning processes. Others are not. Check carefully before you begin. Your credibility as a trainer may be on the line.

How are games and simulations constructed?

Simulations and games can be viewed as having three stages and four elements to their make-up. These seven components are quite simple to dissect and examine separately. The magic of the whole field lies in the endless variety which can be created from these seven components when they are combined with a designer's imagination, a learning need—or problem situation—and a group of involved participants.

The three stages of presentation

The three stages in the process are called the Briefing, Play and Debriefing. They occur in a set sequence which cannot be altered. Each stage has its own purpose, but taken together they add up to a complete experience.

Briefing

The first stage involves briefing participants on the nature of the adventure ahead. At this point, you are easing the players into the approaching experience, but not telling them what they 'will learn'.

'Easing in' involves introducing the players to such things as the nature of games, issuing the rules, describing the roles and scenario, and suggesting themes which the activity may explore. It does not include telling them what they will learn or experience during the game.

The overall purpose of the briefing is to clarify the type of situation about to occur without giving any specific advice about what players may say or do.

Play

Stage two is the actual activity or 'play' which is the core of the game. The start of play must be clearly signalled. Participants need to understand that they are involved in the activity and not still receiving instructions about it. In the same way each game must be clearly terminated before stage three can begin. Some games have a clear end point: for example 'first finished' or 'time's up'. Others depend for their end point on the judgement of the games director. The time period may be very short or quite long. However, it is always important to clearly mark the beginning and the end of the 'play'. At times the facilitator may experience a need to interrupt the play. There are only two ways in which this can be done fairly and neatly. The first is to cut short the activity, and the second is to introduce an interim debriefing process to encourage participants to assess their behaviour and the outcomes to this point. Under no circumstances would we recommend the facilitator shifting from the role of 'games director' to that of participant in order to intervene in the action. The best role to adopt is that of 'unobtrusive observer'.

De–briefing

Stage three usually follows immediately and is called the 'de-briefing'. This is a time for reviewing the activity, analysing behaviour and emotions and drawing real-life parallels where applicable. You must observe the 'play' closely and prepare a list of items you wish to draw to their attention. You must also have confidence in their skills of observation and recall and use every opportunity for players to express their reactions. It is the most difficult stage to complete successfully and requires a good deal of skill and experience on the part of the games director. The debriefing should always be developed in a sequence of three steps. These can be thought of as seeking answers to three questions:

- What happened?
- What feelings did you have during the play?
- What real-life parallels occur to you (the participant)?

In conducting the debriefing be certain to ask the questions in the order presented here. It is not useful to address feelings while there is no agreement about the sequence or nature of events, nor is there any long lasting value in seeking perspectives on real life while participants are not able to express their feelings about the event they have just created, and been part of.

The four elements which create simulations and games

The four key elements which combine to create the action, are the scenario—or setting within which the action occurs; the rules of play; the roles—adopted by players; and the recording system.

They are, of course, parts of a whole activity but players require an understanding of what each one is because discussion during the de-briefing will refer to each one and its particular real-life parallel. Each should be introduced separately during the briefing. Players are thus able to acquire enough information to get inside the action and yet, afterwards, be able to distinguish among the different facets of their experience.

Scenario

'Scenario' refers to the information which is provided to the players about the setting in which the action takes place. It may be given verbally, or in writing. Players may simply be told: "You are members of the community called 'Poverty' in which there are citizens, shopkeepers, police, clergy and social workers". Or they may be given written material including maps, weather forecasts, photos, political information.

In some simulations the scenario represents an aspect of a known situation. Thus the disaster simulation in the secondary school oriented Social Education Materials Project (SEMP) kit could be said to approximate the scene after Cyclone Tracy hit Darwin in 1974.

Visual aids may be provided by way of wall charts, name tags, or even particular items of furniture. Whatever the means used the aim is to help players invoke internally, a 'sense of occasion' within which the action will take place. As far as possible the players are given a shared framework on which to base later discussions. Rather than preventing the emergence of differences in perception, the use of a carefully constructed scenario often underlines the extremely varied ideas which people can develop, given the same basic information.

Rules

The rules, in effect, shape the progress of the action. They describe what behaviour is permissible, and what is not. They are part of the initiating fabric of the game and help create the environment.

Rules exist on two levels. The higher level of rules are those laid down by the game itself. Some directors use a 'games overall director' (or GOD) label to emphasise the power of these rules within the context of the game. Tidal movements, sunrise and wind direction are all real-world parallels of the GOD. rules. If you—or the players—alter these rules then you are directing, and playing a new game. and not the one devised by the designer. This is a very frequent occurrence—so don't be deterred. Just be aware that you are creating changes and be clear about what you want to achieve by doing so.

The second level of rules are the personal values or norms which people use to explain and/or manage the world of the game Some people think of these as the 'rules in my head'. Real-life parallels are all those rules of behaviour which individuals may construe as applying to them or not, depending on the circumstances. Thus 'don't walk' signs are there for everyone to obey, but may be disobeyed by someone impatient to proceed. Thus the 'rules in my head' for someone in a hurry may well prompt them to ignore the lights having checked the safety of doing so!

Such 'people' rules are not tangible, usually existing entirely within the thought processes of those who obey them. They are invisible but add greatly to the complexity of a game when they are utilised by players to manage themselves within the 'mini-world' of the simulation or game.

The rules are often the subject of intense debate during the de-briefing. Individuals learn about the effect of internalised perceptions in shaping particular habits or behaviour patterns. When they observe the results of their behaviour during a game, they are often able to appreciate the real-life effect of similar behaviour. This can, in turn, lead to increased self-awareness, and even efforts at behavioural change. Such an outcome may even be the reason for using a game in the first place.

Roles

In real life people may have a variety of roles to play. Such roles can help to define behaviour in particular settings: thus, at home—'mother'; at work—'manager'; at TAFE or university—'student'; at the weekends—'volunteer ambulance officer'.

In a game, each player is usually asked to adopt a role appropriate to the scenario. These roles can be allocated in a variety of ways. The scenario may be described and players asked to select and define roles appropriate for themselves within it. Written information may be given to help participants 'get inside' particular roles required for the game, or the director may merely state that players are: "Yourselves, acting in an environment different to your usual circumstances".

The easiest-to-use role descriptions, give the outline of the required behaviour but leave to the player the means of putting it into practice including such things as the motivations and background of the character they are playing.

Recording the process

This is the final element in a game and is the one which ties all the action together. It is the process whereby the director, observers and players keep a record of what is happening. It may be a scoring system, a completed model or only the recollection of events as they occurred. These records inform the de-briefing and assist participants to recall what was important in the learning process for them.

What can go wrong and where to go to for help

Control

In traditional classrooms (even those of higher learning) control of what is happening (not necessarily the same as control of what is being learnt) is a paramount concern for many teachers. Play, by its nature, interrupts the smooth flow of control. It may even give control of the action into the hands of the players. And if your expectations equate 'failure' with 'absence of control by the teacher' then, of course play—and by association simulations and games—will be unacceptable.

A TAFE teacher demonstrated this belief system when—as an observer of an activity being conducted with her class, by one of the authors —she removed a student from the room for 'breaking the rules." Unfortunately he was not only not breaking any rules, he had uncovered the one sure way of achieving success and was educating his team about the way in which co-operation would resolve the impasse, and that the competitive approach being used by others would fail.

The 'rules' he was 'breaking' were in her head. They related solely to her own values, and perception of the game rules. He had seen gaps which allowed for imagination and creativity. He was retrieved from banishment, without making her look foolish. However, the student had lost all urge to be creative. His learning—that day—was not about co-operation but about avoiding being different from what 'teacher' expected.

Managing the unexpected

The teacher described above illustrates another aspect of the problems which simulations and games can generate. They produce unexpected consequences. All the care taken to develop your choices and skills in accord with suggestions in table one, can still not prepare you for every eventuality.

Your skill in managing the unanticipated will depend on your willingness to work with what arrives during the course of the game. This is not to say you will have to abandon what you planned—only that you will have to find—in the action before you—the examples and issues that you wish to use as the focus for your discussion during the debriefing. An effective debriefing is testament to the flexibility of the learners and of the leader.

The bank accountant who learnt why the United Nations was in turmoil during 1982, did so during a simulation played to provide insights into the complexity of managing good office communications! He was concerned to understand the bigger problem—and found his answer in a simple activity selected for its relevance to his new appointment! Allowing time for him to explain his discovery added immeasurably to the learning of his fellow participants—who had created the setting for him.

Emotional distress

Because they encourage involvement, simulations and games can occasionally disturb long buried emotions. One adult player, was participating in a puzzle-solving activity involving string around her wrists. It revived childhood experiences of being restrained in this way and the session leader found it necessary to seek professional help to resolve the feeling aroused in the officer. This does not occur often, but it does happen. If you feel uncomfortable about the possibility of arousing strong responses to the learning then simulations and games may not be for you. But when you trust your own responses to others' learning needs and experiences then you will be able to generate a learning environment in which people feel safe to reveal themselves, and grow richer from the experience.

Time management

If your use of timetables is such that you expect to move on when the clock says it is time to—then don't use simulations or games. They cannot be precisely timetabled. Some presentations of the one activity have varied as much as an hour between groups. Not all activities will vary as much as this, but it is important to understand before you begin that effective learning is, at least partly, out of your hands—as far as time is concerned. Some groups, and individuals will grasp the point within the suggested time frame. Others will take longer—or shorter!

Conclusion

Games are a means of dealing with complexity. They do this in ways no other teaching medium provides. If you are working with adult learners, remember that they too enjoy playfulness as an involving and learning strategy.

This chapter was written by two authors who relish the challenge of using simulations and games in working with adult learners. Our enthusiasm is, clearly, tempered with caution. This chapter has not attempted to provide a comprehensive coverage of the topic. The bibliography provides resources for your further learning; however, the very best way to learn more is to use the materials. Trial them with friends, use simple games to develop experience at de-briefing and reflect frequently on your own experiences. You will find the time well spent.

The art gallery

A game to encourage exploration of meaning and conceptual linkages

This can be played in almost any subject area, the only requirement is the existence of one or more key words central to the field. Examples include such words as *management, service, or quality.* Arrange your players in teams of three to five members. Tell them (briefing) that they are going to compete in a brainstorming exercise for a few minutes. You will keep time. Remind them of the brainstorming rules you want them to use, (e.g. no censoring of ideas, write everything down, work fast.)

When everyone is settled and each group has a scribe, tell them you want a list of as many words as possible which they associate with the chosen key word—which you now announce. State the time limit(usually two to three minutes) and say 'Begin!"(play)

When the time limit is up, call 'Stop!" and ask each scribe to count their total and then read out their list of words. Congratulate the winners, and then say (sadly):

> *"I am really impressed with your speed in thinking up so many words, but alas I cannot read them. I need pictures to explain complex meanings to me. So, to help me understand the full extent of your thinking, I want each group to use these pens and chart paper to ILLUSTRATE the key word (restate the key word you announced at the beginning). You will have about fifteen minutes to work together. You may borrow each others' words and ideas, but there must be no words or numbers on the chart—I can't understand them!"*

Without further explanation distribute the pens and paper and give the groups plenty of room. There will be confusion. Stay out of it. You can't read remember! Do observe closely however, especially for those things you want to discuss later. At the end of the stated time limit call for attention. It may take a while to achieve, as the usual process is that groups start slowly and work themselves into a frenzy as creativity and passion take over. Ask each group to 'hang' their illustration on the 'art gallery' wall and then allow time for inspection and informal discussion.

After a few minutes ask everyone to seat themselves facing the 'art gallery' wall and ask questions such as the following (debriefing):

Are there any similarities among the pictures? Are there any images which occur in more than one picture? Are there any images which occur in only one picture? Do the pictures accurately convey—to those who did not draw them—any aspects of the chosen topic? what aspects? and which pictures? At this point it may be wise to allow each group to explain its imagery and how it was arrived at.

From here the discussion can proceed on one or more of several lines: e.g. How did the groups arrange themselves to develop the imagery? Was there an initial emphasis on drawing skills and did this last? (It seldom does, as individuals begin to spark off each other. Many groups find they have several artists.) These questions are relevant to a discussion of group behaviour. Other aspects which can be explored are the wider meanings of the topic word, the ability of adults to be creative, the roles of play in a learning activity, etc.

When I use this with managers the most frequent response is represented by the manager who said:

> *"I've been a manager for 15 years and I have never looked at my job as a whole process before. I've only ever seen it as days full of bits and pieces. This makes the concept of managing look so different to what I've ever experienced before!"*

The discussion can follow many different trails—depending on the topics you had in mind when you began, and on the issues raised by participants. In closing, be sure to check that everyone has had their say, and that key learning points for individuals and the group have been recorded in some way. One way to do this is to allow time for private writing along the lines of such questions as: What am I now thinking of—in regard to my future behaviour about this topic? What have I been doing that I now want to change? What do I want to begin doing? or do differently? etc.

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Section 3 Assessment techniques

In addition to developing competence in using new learning strategies, vocational teachers and trainers face the challenge of coming to terms with an unfamiliar range of assessment techniques resulting from the recent change of direction of vocational education and training.

As has been mentioned in section 1, assessment techniques should be seen as part of a wider evaluation strategy that each individual teacher/trainer needs to develop. Such a strategy includes not only assessment of student achievement but also evaluation of the teacher/trainer, (including self evaluation and student feedback), and evaluation of the course as a whole.

While each of the chapters in this section deals with a different assessment issue, they have in common the recognition that assessment needs to support the changes in the vocational education and training system—particularly the need to ensure that trainees who emerge from courses and informal training are able to perform the tasks of their job to the standard required i.e. to demonstrate competence.

This does not mean that all assessment will need to be direct observation of performance. There will still be a need to test knowledge. However, there will be an expectation that the assessment processes will more closely reflect the integration of knowledge and skills which occurs in real life.

As has been pointed out in a number of the chapters in this section, assessment can only ever hope to approximate reality and can never be more than a guide to whether the skills or knowledge being assessed in one situation can be applied in others. That is, assessment in most instances requires a sampling procedure since it would be too expensive and time consuming to test for all the workplace applications which are possible.

This is certainly the case in vocational education where virtually all courses aim to develop skills and knowledge applicable over a wide range of contexts. It is also the case when assessing prior learning for credit towards academic awards where the evidence presented by candidates will need to be generalisable beyond specific contexts.

Another major assessment issue which will have to be faced by those involved in vocational education and training is the need to design assessment systems which test global criteria in a reliable way. The more direct and 'realistic' the assessment the less likely assessors can rely on one correct answer or one way of doing things. This inevitably affects the objectivity of assessment; i.e. while direct assessment is more valid it is less reliable. This places on assessors the responsibility to design procedures that will increase reliability—such techniques as multiple markers checklists and so on.

In this section the general issue of assessing competence is taken up in chapter 11. In chapter 12 the major issues facing the vocational education system are discussed. These include the issue of assessing competency-based training and the inadequacies of current assessment practice.

In chapter 13 the issue of assessment of prior learning is examined. As is pointed out in this chapter this has the potential for increasing productivity in the economy as well as increasing equity by ensuring individuals are credited with skills they possess. This will enhance career prospects promised under award restructuring. In chapter 14 self assessment is considered. As the hierarchical organisation of work disappears the individuals in the productive workforce of the 1990s,whether they are trainers or trainees,will need to be able to monitor their own performance.

The assessment strategies considered in this section are not easy to develop. But if the aim of developing a productive workforce is to succeed, then all vocational educators and trainers must examine their current assessment practices and be prepared to change them so they can support the wider changes to vocational education and training which are currently being introduced.

Chapter 11

Assessing standards of competence

Doug McCurry

McCurry's chapter takes up the assessment issues arising out of the themes addressed in chapter 2. The moves to reform vocational education and training within a national competency standards framework cannot succeed without a change in thinking about assessment methods. The major argument in this chapter is that the conceptualisation of competence requires a holistic approach which integrates knowledge and skills with realistic workplace practices. For assessment, this means a multi-step process which incorporates the establishing of occupational competency standards, a decision to sample areas of practice and the design of a variety of procedures to assess the performance of trainees against these standards. McCurry points out that there are different types of standards and that competency- based assessment is a part of criterion-referenced assessment. He stresses that criterion referenced standards are confused by the majority of teachers and trainers. They are generally thought of in terms of a pass/fail examination, whereas in fact they should incorporate the concept of a scale of increasing competence in an occupational area. Thus, in criterion-referenced assessment a minimum standard is specified, but there is a recognition that a scale can be constructed beyond that minimum.

In the second section of this chapter, McCurry deals with the different types of assessment and outlines the issues to consider in choosing between them—particularly the fact that such a decision will always involve balancing competing demands, both practical and theoretical.

This general discussion of competency- based assessment is taken up in chapter 12 where the specific context of competency- based assessment in vocational education is considered.

Introduction

Competency-based learning and assessment

Three of the major themes in thinking about assessment in recent times are:

- the need for greater definition of what is to be learned and assessed;
- the need for specification of levels of performance or standards of competence; and
- emphasis on comparison of students' performance with a standard (criterion-referenced assessment) and a movement away from norm-referenced assessment.

These attempts at definition, specification and assessment based on standards have been the foundation of many attempts at educational improvement.

The most recent wave of this thinking in Australia is in the emphasis on defining areas of competence and levels of performance in vocational education and training. These developments are usually described as 'competency-based' education and training.

There have been recurrent calls for the introduction of competency-based approaches to training and assessment in Australia. They have arisen in part from a view that the requirements of formal education and training programs are often based more on theory and tradition than on the demands of the workplace, and have not taken into account the experience or prior learning of students.

Competency-based assessment is being currently developed in Australia as an approach to establishing occupationally relevant standards of competence. The emphasis is on demonstrated competence in the skills important to an occupation. The ability to demonstrate these skills is usually considered more important than the time a person has spent in formal training. The emphasis on demonstrated competence is considered to have the added advantage of recognising skills irrespective of where and how they were acquired, including skills developed in the workplace that may not be reflected in paper qualifications. An important element of the competency-based movement is the attempt to make explicit the skill standards necessary for competent practice. Through explicit skill standards, education/training goals are made more obvious to students/trainees, areas in which remedial action is required can be identified, and the specific competencies of persons without formal qualifications can be established and recognised.

Competency-based education and training programs have a long history in the United States. Such programs are characterised by the precise specification and articulation of competencies associated with a job or task. The certification of students in these programs was based on an assessment of their mastery of these specified elements of occupational competence.

The competency-based movement has also had an impact on trade training in some parts of the world. In the UK, for example, the New Training Initiative of the Manpower Services Commission (1981) recommended that standards of competence should be set for each occupational area based on identified work roles, and that these skill standards should in the future underpin vocational qualifications.

In Australia, competency-based training and assessment is seen by the Commonwealth Government as an important element in the restructuring of industrial awards. This restructuring presumes that competencies will be defined and assessed in a range of occupations:

- Competency–based trade training requires the identification of all the skills involved in an occupation and of the specific mix of skills, knowledge and attitudes required for recognition in a specific occupation; mechanisms to achieve those skills; and methods of assessment and certification onattainment of those skills.

  (Report of the DOLAC Working Party on Competency-Based Trade Training, 1989)

To set national skill standards, the Commonwealth Government has established the National Training Board:

- The National Training Board (NTB) will, in consultation with industry, set national skill standards for occupations from entry to para-professional level covered by industrial agreements. These standards will provide the benchmarks for curriculum development, accreditation of training standards identify the core skills needed for the performance of fundamental tasks required in the everyday practice of a given occupation, and the level of competence necessary to adequately discharge those tasks. These would be applied regardless of where the individual has gained his or her training... The development and adoption of national skill standards has the potential to... increase the emphasis placed by recognising authorities on a person's actual skills rather than just on his or her formal qualifications. (Dawkins, 1989, 17–18)

A review of recent Commonwealth Government documents suggests that a system of competency- based assessments will involve:

- a review of what workers do in the course of their work;
- a description of clear and appropriate competency standards;
- a direct assessment of performance with an emphasis on demonstrated skills and knowledge; and
- a comparison of performance with described competency standards.

The strategy of identifying competencies and subcompetencies through a detailed analysis of workplace roles and tasks is described by Ashenden as a 'revolution' in the assessment of occupational competence:

> If standards can be clearly stated, and if they can be closely related to occupations and the workplace, a revolution in the assessment of individuals becomes possible. Clear and appropriate standards make possible the direct assessment of competencies, whether or not a course has been taken.
>
> (Ashenden, in Employment and Skill Formation Council: The recognition of vocational training and learning, 1990)

Another potential benefit of competency-based education will be the way it encourages and supports the kind of self-directed and self-paced learning discussed in this book. Competency-based education that describes what is to be learned and defines competent performance will offer great support and encouragement to students and trainees.

Some definitions

Thinking about the concept of competence and competency-based assessment is sometimes clouded by confusions and inconsistencies in the use of terminology. The following comments seek to make some distinctions and clarify some issues, or at least explain the way various terms are used in this discussion.

Competence

It is common to describe a person as 'competent' in an area of work if they have the knowledge, skills and attitudes to be able to function at some minimum acceptable level. To be more precise, competence is something that can be attributed to an individual on the basis of inferences drawn from performance in assessments or actual work.

The concept of occupational competence is a global or general construct, and should be distinguished from performance on specific tasks or the demonstration of specific skills.

Skills

Skills are more or less specific kinds of operation or performance that in combination make up the global attribute of competence. In some approaches to assessment, skills are viewed as specified and specific performances that can be directly demonstrated, observed and assessed. The limitation of this view is that it can reduce competence to merely that which can be directly observed.

Skills are best thought of as the components of competence. Some skills can be directly observed, but others can only be indirectly inferred from performance. Competence itself cannot be properly thought of as a total derived from observation of specific skills. Competence is a global attribute determined on the basis of observed and attributed knowledge, skills and attitudes.

Areas of competence ('competencies')

Within a trade or occupation, it will be desirable to identify a number of areas or aspects of knowledge and skill in which trainees will be assessed and for which minimum acceptable levels of competence will be established. These aspects of an occupation are best referred to as 'areas of competence' or 'competencies'.

Performance

To assess a trainee's level of competence in an area of work it is necessary to collect observations of performance—usually on specially-designed assessment tasks. These levels cannot be observed directly but must be inferred from candidates' performances on relevant workplace tasks.

Standard

A standard(or competency standard) is a minimum acceptable level of performance in an area of competence.

It is important that a distinction be maintained between:

- *the various areas* in which a trainee is to be assessed and, within each of these areas,
- *the minimum acceptable level* of competence (standard) against which the trainee is to be judged in a specified area of competence.

This important distinction is sometimes blurred in attempts to develop competency-based standards and assessments. Frequently, competencies themselves are being wrongly referred to as 'standards'.

Some approaches to defining areas of competence

Some previous attempts to implement competency-based assessments have taken what might be described as a task-based approach to assessment. Under this approach, lists of 'competencies' in the form of tasks (often psychomotor tasks) are developed. The method of assessment is to administer the task described by the competency. This approach is limited because it either assumes that the ability to complete a task is a demonstration of competence, or it describes the nature of the required performance on the task in such general terms ('adequately', 'effectively', 'appropriately') that it cannot easily be interpreted in practice. While there are obviously technical skills that a worker must be able to perform competently, occupational competence cannot be adequately conceptualised and assessed in terms of lists of precisely-defined skills.

Another possibility that might be referred to as a cognitive skills approach to describing occupational competence. Under this approach, a range of higher-order skills such as critical thinking and problem-solving might be seen to underlie competence. These would be listed and form the basis of assessment methods. But there are reasons for believing that that the ability to apply generic skills in isolation is often a poor predictor of the ability to solve practical problems in the workplace. And as a result it seems that occupational competence cannot be adequately conceptualised and assessed in terms of general higher-order thinking skills and strategies. There is also a knowledge-based approach to conceptualising occupational competence. There is evidence that points to the crucial role of the expert's knowledge base in competent performance, but there is also reason to think that competence is not adequately conceptualised and assessed in terms of knowledge alone, particularly through tests of decontextualised knowledge. Factual and procedural knowledge must be assessed, but in the context of the trainee's ability to draw on that knowledge to solve realistic problems.

The discussion above suggests some of the limitations to different approaches to describing competence. This is not to suggest that there is no value in attempting to identify and list the kinds of skills and knowledge that are important in an occupation. But checklists of specific skills and knowledge do not in general provide an adequate basis for conceptualising competence, setting minimum performance standards, or assessing trainees against those standards.

The conceptualisation of occupational competence requires a more holistic approach in which competence is understood as the ability to draw on and to integrate a variety of knowledge and skills to address realistic workplace problems. The question then becomes: what are the broad areas of work in which a trainee must demonstrate at least minimal competence?

The conceptualisation and assessment of competence is a multi-step process. The steps in this process are:

Step 1 An analysis of the roles and tasks that workers undertake in the course of their everyday work.

Step 2 An analysis of the kinds of knowledge and skills required by the occupation. In general, skills will be those involved in a range of tasks, and knowledge will be that required for a number of areas of practice. Required higher order skills should be included.

Step 3 A decision about the areas of work in which trainees will be required to demonstrate at least minimum competence. Trainees will be assessed in each of these areas.

Step 4 A description of the minimum required level of competence in each of these identified areas. This description is the 'standard' for that area. It should describe criteria to be used in judging a candidate's performance.

Step 5 The development of appropriate methods of assessment for each area of practice identified in step 3. The purpose of assessment is to infer from a trainee's performance their underlying level of competence in that area.

Step 6 The comparison of a candidate's performance with the standard set in step 4 and a judgement as to whether or not the standard has been satisfied.

Steps 1 and 2 involve a review of occupational practice and the issues involved in this process are addressed in detail in the NOOSR Research Paper no. 1, *Establishing competency-based standards in the professions*, where a variety of techniques for analysing occupational tasks/roles and attributes are described. Important questions in this process are:

- What are the major aspects or divisions of the occupation?
- What are the roles that members of this occupation play?
- What are important tasks in the day-to-day activities of a worker in that occupation?
- What areas or kinds of knowledge does the competent worker need?
- What kinds of skills and abilities does the competent worker need?
- What are the affective and interpersonal qualities desirable in the worker?

Out of this occupational analysis will come an identification of key areas of competence. These will be aspects of the occupation for which it is decided that trainees will be required to demonstrate at least a minimum level of competence.

Identifying areas of competence for which assessments are to be conducted, educators and trainers should be looking to identify key knowledge and skills in the context of realistic occupational tasks. This requires that knowledge, skills and occupational tasks be brought together in some way.

Methods for assessing competence

Kinds of standards

There are several general approaches for setting a minimum required standard and for assessment in general.

Norm-referenced standards

Under a *normative* approach, the passing standard is set in relation to the group of candidates. In some States, for example, a decision has been made that 80 per cent of candidates sitting each Year 12 examination will pass, and 20 per cent will fail. In this way, the pass mark is defined as the mark above which 80 per cent of candidates perform in any particular year. The passing standard is said to be defined 'normatively'. When standards are set in this way, the levels of knowledge, understanding and skill required to 'pass' a subject can vary from year to year.

Task-referenced standards

A second general approach to setting standards is to begin with a list of precisely-defined skills or behaviours. Narrowly–defined competencies of this kind are referred to in the educational literature as 'objectives'. According to Bloom et al. (1971, p. 28), objectives should be stated as directly observable student behaviours which can be reliably recorded as either present or absent. They should be 'stated in terms which are operational, involving reliable observation and allowing no leeway in interpretation'. To achieve this degree of reliability, assessors are encouraged to state objectives as observable tasks such as 'calculating', 'matching', 'recognizing', 'selecting', 'naming', 'listing', and 'stating'.

If the objective is to measure the thickness of a piece of wire, for example, then the standard can be defined in precise terms for that particular task. Task-referenced standards can also be expressed as required success rates. In educational assessment it is common to consider an objective to have been 'mastered' if a candidate is successful on 80 per cent of tasks developed for that objective (a child might be considered to have 'mastered' 2-digit addition, for example, if he or she is able to answer correctly 80 per cent of 2-digit addition tasks).

Criterion–referenced standards

The concept of a 'criterion-referenced' standard was introduced by Robert Glaser in 1963. In criterion-referencing, performances are compared with stages on a scale of increasing competence:

- Underlying the concept of achievement measurement is the notion of a continuum of knowledge acquisition ranging from no proficiency at all to perfect performance. An individual's achievement level falls at some point on this continuum as indicated by the behaviours he displays during testing... The standard against which a student's performance is compared when measured in a criterion–referenced way is the behaviour which defines each point on the achievement continuum. (Glaser 1963, 519-20)

As Cole (1990) points out: in the years since 1963, criterion-referencing has often been confused with lists of behavioural objectives, each linked to an observable task:

- Although the name criterion-referenced became popular after Glaser and Nitko (1971) used the term, there is little relation between the popularized version and the Glaser-Nitko approach. The popular application has involved a largely unconnected pool or list of objectives (each linked to test items) whereas the Glaser-Nitko proposal was for

> tests linked to a scale of increasing competence or achievement corresponding to an instructional path building toward increasingly advanced forms of learning
>
> (Col, 1990, 6)

Criterion-referencing recognises that candidates have varying degrees of competence within an area of occupational activity and sets out to construct and make explicit a 'scale of increasing competence' in terms of which candidates can be assessed and minimum required standards can be specified. Sadler (1987) refers to this method as 'standards-referenced' assessment.

Competency–based assessment is a version of criterion-referenced assessment and as such is clearly distinguished from norm-referenced assessment. Competency–based assessment should also be distinguished from task-referenced assessment because competency–based assessment will aim to described areas and standards or levels of performance rather that assuming that tasks have standards of performance built into them.

Classifying methods of assessment

Before considering particular assessment methods it may be useful to reflect on some of the ways in which assessment methods can differ. The methods we discuss in this section differ on a number of dimensions:

Workplace versus examination centre

For some kinds of knowledge and skill, the most appropriate and practical approach is to set up a special examination or assessment centre. Assessments of this kind are usually carried out under secure and standard conditions. Other occupational skills may be best assessed in the context of the workplace under conditions more like those encountered in day-to-day practice. Contextualised assessments of this kind might be made during apprenticeship or supervised practice.

Fixed time versus unlimited time

When assessments are made under supervised conditions, they usually involve a time limit. Candidates are presented with a task or set of tasks to carry out in a fixed time. Workplace assessments are more likely to be conducted without time constraints and may be carried out on an on–going basis over a period of time.

Restricted versus unrestricted access to resources

Workplace assessments usually assume unrestricted access to reference books and the tools of the profession (computers, measuring instruments, stethoscopes, and so on). Some assessment tasks allow limited access to resources which candidates may be permitted to bring to the assessment centre.

Traditional examinations usually allow no access to textbooks or other resources.

Direct versus indirect assessment

It has been common practice, particularly in educational courses, to assess knowledge of facts, principles and procedures in the abstract. These facts, principles and procedures are assumed to be so fundamental and ubiquitous to work that, for the purpose of assessment, they can be abstracted from particular problems and cases. Assessments of occupational competence that rely heavily on the assessment of abstracted knowledge might be described as 'indirect' in the sense that they assume that learning of this kind is directly related to occupational competence in the workplace, and they attempt to infer occupational competence from mastery of basic knowledge.

A more direct assessment looks at a candidate's ability to recall and apply appropriate facts, principles and procedures to address a real (or perhaps simulated) occupational problem. In general, assessments requiring the application of knowledge and skills to realistic problems lead to more valid inferences about underlying occupational competence. In general, different methods of assessment will be required for different kinds of competencies. Paper and pencil tests and examinations can be efficient methods of assessing factual knowledge. But they are not the most appropriate methods of assessing candidates' abilities to carry out practical procedures involving a degree of psychomotor skill and they cannot assess interpersonal skills. For different areas of occupational activity, it is likely that different assessment methods will be required. The following discussion considers a variety of assessment methods that could be used in for competency-based assessment. Advantages and disadvantages of particular methods are canvassed and some of the issues that need to be considered in choosing among and implementing these methods are discussed.

Issues to consider in choosing assessment tasks

Because assessment is a practical activity, there are always competing and even conflicting needs and requirements to consider when designing an assessment process. Assessment involves balancing competing demands and making practical and reasonable trade-offs between requirements.

The following list suggests some the issues that have to be considered and balanced against one another to design a valid and reliable assessment process.

WHAT IS TO BE ASSESSED?

QUALIFICATIONS	EXPERIENCE
KNOWLEDGE	SKILLS
THEORY	PRACTICE
PRODUCT	PROCESS
FACT	UNDERSTANDING
COMPREHENSION	JUDGEMENT

HOW IS IT TO BE ASSESSED?

DIRECT	INDIRECT
SPECIFIC	EXTENSIVE
CLOSED	OPEN
CONTROLLED	NATURALISTIC
BASIC	HIGH-ORDER
OBJECTIVE	SUBJECTIVE

Multiple-choice examinations

Multiple-choice examinations are most commonly used to assess candidates' knowledge of facts and understanding of principles. However, when they are well written, multiple-choice questions (MCQ) can also assess 'higher-order' skills such as selecting an appropriate principle or procedure and applying it to a problem, using an understanding of several principles to develop an appropriate solution to a problem (for example, developing a mathematical formula for a new situation from first principles), and evaluating evidence and making judgements about the appropriateness or value of data.

When reviewing MCQ questions it is useful to ask:

- What kinds of skills are being tested?
- How clearly related to occupational competence are the questions?
- To what extent do they test recall of information?
- To what extent is the recall of that information a part of or essential to occupational competence?
- To what extent do the questions reflect the essence of the occupation?

Multiple-choice examinations are an efficient way of assessing many aspects of a trainee's knowledge. But they are inevitably artificial in the sense that workers are not presented with multiple-choice questions in day-to-day work; they are closed in the sense that they provide all the alternatives and do not require candidates to generate new responses or information. And they are indirect in the sense that they assess abstract knowledge and skills rather than the ability to apply know-ledge and skills to the solution of day-to-day occupational problems.

Although multiple-choice questions are often used in examinations, good questions of this kind are difficult to write and the standard of most multiple-choice questioning is low. Developing quality MCQ tests requires experience and skill in item writing, trialling, and revising questions on the basis of detailed analyses of how questions have functioned in practice. MCQ tests can perform consistently and reliably when they are developed well, but if they are not well developed, they cannot be depended upon and may be of dubious validity.

Once they are developed, MCQ examinations are relatively inexpensive and convenient to administer and score. They are uniform and standardised in the problems they pose and in the demands they make on candidates. MCQ tests are described as 'objective' because their scoring can be mechanical and unambiguous. However, there is always an element of subjective judgement in decisions about what to include in a multiple-choice examination and about what constitutes adequate performance on such a test.

In a system of competency-based assessment multiple-choice questions can be a valid and useful method of assessing candidates' mastery of important factual and procedural knowledge. They have the special advantage of being able to assess a candidate's mastery of a wide variety of facts and procedures in a limited period of time.

Written–response tests

Other paper and pencil tests provide opportunities for candidates to make written responses. These include short-answer questions, structured tasks, and extended answer questions such as case-studies and problems. An advantage of this format is that it assesses candidates' abilities to produce a relevant response (rather than simply identify a correct answer) and so provides an improved opportunity to collect information about a candidate's thought processes and solution strategies.

Short–answer questions can be used to assess the same range of knowledge and skills assessable with multiple-choice questions. In addition, they provide an opportunity to test factual information and comprehension in a way that requires the candidate to generate ideas and solutions rather than selecting a correct answer or eliminating incorrect alternatives.

A structured task is a series of short-answer questions relating to the same problem. Candidates are presented with a description of a situation and are then asked a series of questions about that situation. Unlike most multiple-choice and short-answer tests, the questions in a structured task do not test isolated pieces of knowledge and skill. They are often interdependent and assess knowledge and skill in the context of the described problem.

Extended written responses can be used to assess candidates' abilities to develop a series of ideas in relation to a problem. Candidates might, for example, be required to produce an extended written response in relation to a work problem they have been set. The advantage of using an extended written response as the basis for assessing competence in an area of occupational practice is that it is capable of providing information about complex sets of skills and can focus on higher-order thinking and problem-solving strategies. Extended written tasks also give insight into the language and written communication skills of a candidate. The disadvantage is that extended written responses depend heavily on writing skills in English. For non-English-speaking migrants, extended written responses can create special problems.

In general, written-response tests are much less difficult to construct and much more difficult to mark than MCQ examinations. As the number of candidates grows, extended written responses can become expensive because they depend on competent assessors. Because the marking of extended written answers involves informed judgements on the part of readers, this form of assessment is usually seen as less reliable than objectively-scored multiple-choice questions.

There is always a risk in written tests and examinations that they will assess only the ability to recall factual knowledge and procedures. One way of reducing the likelihood of this is happening is to allow candidates access to reference books. If test constructors know that candidates will be able to find answers to factual questions in a book, then they are more likely to write questions that go beyond the demonstration of factual knowledge to the assessment of students' understandings of key principles and their ability to use facts and procedures. Such an assessment may focus on the candidate's ability to think in the manner of the occupation and so provide information consistent with the intentions of competency-based assessment.

Most paper and pencil tests are relatively indirect methods of assessment. The link between performance on a written test and performance in the workplace is usually more tenuous than the link between workplace skills and performances on simulations and realistic tasks. Nevertheless, the administrative ease and convenience of paper and pencil tests gives them important advantages. As Fitzpatrick and Morrison point out, there is little reason for developing a performance test if a suitable paper and pencil test can do the job:

> If an adequately relevant and otherwise suitable paper-and-pencil test is available or can be readily developed, there is no point in using or developing a performance test. However, the ready availability of paper-and-pencil tests has often blinded us to considerations of relevance. It is an exercise in futility to measure accurately something one does not want to know. Relevance is the primary consideration, and good measurement is only a means to the end of appropriate evaluation. (Fitzpatrick and Morrison, 1971)

Given the need for feasible and cost-efficient means of assessment, those who are designing a range of tasks must determine whether the methods they use assess the actual basis of work performance and job competence.

Oral assessments

Oral assessments can be used to assess knowledge and skills, but they have the added advantage of providing opportunities to assess interpersonal and communication skills.

Oral assessments include situations in which candidates interact with assessors in an interview and so must 'think on their feet'. This can create pressures for candidates that do not exist with other forms of assessment. On the other hand, it could be argued that these pressures are not unlike those that workers encounter in their day-to-day interactions with customers and colleagues and that oral assessments are uniquely capable of providing insight into these aspects of a candidate's occupational competence. The disadvantages of oral tests are that they can be difficult to make predictable and uniform. They can also involve peripheral and irrelevant personal issues that have little to do with occupational skills.

Performance or product assessments

Performance or product assessments require candidates to undertake practical tasks in simulated or real situations. Candidates are assessed on their performance on a task or series of tasks or on the quality of the products they create.

This method of assessment provides information about candidates' abilities to carry out occupational tasks by producing work. Knowledge and theoretical understanding are involved in these assessments, but they have a distinct emphasis on the manipulative and psycho-motor skills that can be a crucial part of occupational competence. Performance assessments tend to focus on major occupational tasks and to assess important skills in combination. Candidates are given a scenario or task and are required to produce an interpretation, a response to the problem, or a recommendation. In an even more realistic simulation of actual work, candidates in such fields as carpentry or engineering could be required to produce a plan, a model or a construction.

The assessment of performances and products is, of course, time consuming, expensive, and may be difficult to organise. Assessments of this kind are difficult to constrain within uniform parameters, meaning that there can be difficulties in ensuring that judgements of performance are comparable and reliable.

Performance and product assessments are valuable components of a system of competency–based assessments. If properly designed, they are capable of providing valid assessments of realistic workplace tasks.

Work–based assessments

Work–based assessments are carried out while a person is working in a occupation, perhaps during apprenticeship or under supervised practice. Because work-based assessment can take place over an extended period of time, it can yield valuable insight into the overall performance and functioning of a worker. The candidate can be observed undertaking a wide variety of real tasks and much more reliable judgements about occupational competence are possible than with assessments conducted in limited time periods on limited ranges of tasks.

The disadvantages of this method of assessment are obvious. Work–based assessment is possible only if a candidate is in supervised practice. Supervision may be difficult to arrange and costly. Even then, assessments may be based on the judgements of only one assessor who may have limited experience in supervising similar candidates.

Nevertheless, work-based assessments are the most direct and realistic tests of competence, and they are a particularly useful method of assessment in areas such as the trades where a person can be assessed on an on–going basis by their workplace supervisor.

The major assessment methods reviewed in this section are summarised in the following figure.

METHODS FOR ASSESSING COMPETENCIES

Methods of Assessment	**Distinctive Purposes and Uses**	**Advantages and Strengths**	**Disadvantages and Weaknesses**	**Practical Considerations**
Pencil and Paper Tests				
Multiple Choice Tests	Factual and procedural knowledge Understanding of principles	Consistency and reliability Uniform and standardised	Assess ability to recognise rather than recall Difficult to use for problem solving and higher order thinking	Difficult to write Cheap and efficient to use
Written Responses Short Answer Extended answer	Use of information Application of knowledge Generating ideas and solutions	Tests more complex set of skills Higher order thinking and problem solving	May assess language skill in addition to knowledge or competence	Difficulties ensuring reliable judgements Expensive to process
Oral Assessments	Interpersonal skills Interactive thinking	Assessment of thinking skills Multi-dimensional	Difficult to Standardise Variable Conditions	Problems with the reliability of judgements
Performance Product	Psycho-motor skills Functioning Ability to produce	Holistic and direct assessment of skills	Expensive of time and resources	Difficulties ensuring reliable judgements Logistical difficulties
Work based assessment	Overall performance and functioning	Directness, breadth, range of assessment	Duration Availability	Dependent on supervisor and supervisor's judgements

References

The following sources are referred to in this discussion of competency-based assessment. There is an extensive literature on this topic, particularly coming from the United States in the 1960s and 1970s. While it can be useful to look at some of this material, none of it is directly enough related to the way competency-based assessment is developing in Australia in the 1990s to be worth recommending to the reader with a general interest in the issues. There is some material from the United Kingdom in the 1980s that does relate to recent developments in Australia, but none of the texts consulted in developing this discussion are really suitable for the reader interested in a general introduction to the topic as a way of beginning work in their own area of teaching and assessing.

Rather than reviewing the more general texts, it would be more useful for interested readers to use the conceptual framework offered by the two papers commissioned by NOOSR in 1990, *Establishing Competency–based standards in the professions* and *Competency–based assessment in the professions*, as a basis for exploring the literature on describing and assessing competence in their occupational area. A good deal of work has been and is being done to define what should be assessed and how it should be assessed in each occupation. This work will offer the basis on which competency–based assessment will be most usefully developed in the future.

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Chapter 12

Assessment in modern vocational education

Geof Hawke and Liz Oliver

Hawke and Oliver concentrate on two main themes which will affect assessment in vocational education in the future: the move to competency-based training and the increasing recognition of the importance of adult learning principles.

Competency-based training will present many challenges to vocational teachers and trainers in industry. The former have tended to assess theory and practice independently and have been trained almost exclusively in the use of pen and paper methods of testing knowledge. The challenge now is to design assessment schemes which are as 'direct' as possible i.e. which measure outcomes of whole jobs in realistic settings. It is essential in their view to take a broad definition of competence similar to that discussed in chapter 1. Assessment must take into account the need to measure independent thinking, ability to manage and plan jobs as well as the capacity to undertake specific tasks.

They argue too for assessment which takes into account the nature of the adult learner—by far the majority of vocational students. This means the use of a range of techniques which include continuous rather than one off final examinations , the use of self evaluation techniques (which are dealt with in detail in chapter 14) the use of peer assessment and the testing of applied knowledge.

This chapter details a number of ways of assessing knowledge and performance which go beyond traditional assessment in vocational education courses.

These suggestions are as relevant to trainers in industry as they are to TAFE teachers. In a competency-based training system, all trainers will need to be familiar with a range of assessment techniques even if, in their case, they would typically test performance rather than knowledge.

Introduction

In the last five years Australia has undergone a major realignment in the nature and direction of vocational education. Much of this is summarised in the re-emergence of the word 'training'. In particular, vocational education and training (VET) is being seen as a key contributor to the economic survival of the country. Skills formation, and skills-based industrial awards are at the forefront of government and industry thinking. Indeed, throughout the world, there is pressure on the education system to be increasingly responsive to the economy, coupled with the recognition that this is an era of unusually rapid social and technological change.

Two themes in particular have significance for changes in the role and nature of assessment; the move to competency-based training and the increasing recognition of the importance of adult learning principles.

The first of these has substantially raised the importance of assessment within the overall training framework and given it a new focus. The second extends that new focus and gives us some useful ideas to guide how we ought to put assessment into practice.

Competency-based training

The previous chapter deals in general terms with the notion of assessing competency standards. We seek in this chapter to relate these general principles to the context of vocational education and training.

There is growing acceptance that vocational education and training must, more than ever before, be closely linked to the requirements of job performance and that learning outcomes must focus on being to do the tasks of the job rather than simply being to memorise and repeat facts from the knowledge base. This is, in fact, one of the fundamental features of competency-based vocational education and training (often abbreviated CBT). The discussion paper, *A strategic framework for the implementation of a competency- based training system* (COSTAC 1990, provides an overview of the proposed Australian system.

One of the key features of a competency–based assessment system is that it is criterion referenced. The features of such assessment are discussed in chapter 11. A well- known example of a criterion- referenced test is the driving test. There is a specified body of knowledge which learner drivers must memorise and which is outlined in the Motor traffic handbook. As well, clearly defined practical skills must be performed to a particular standard in order to secure a licence to drive. The candidate is expected to show ability only on the listed competencies.

Three important points related to a criterion- referenced test which can be illustrated by reference to the driving test are outlined below.

- Whether any given person passes the test is not dependent on how other people perform on the test—for example, there is no need to make sure that a certain number of people pass or fail.
- If, however, the person fails the test, it is possible (because the criteria on which performance is evaluated are clearly specified), to let them know which criteria they failed to meet, (e.g. driving within the speed limit) and, therefore,

further attention may be directed specifically to the problem area.

- It is irrelevant to the examiner if an individual can demonstrate ability on additional competencies, or show driving skills and knowledge which are of a higher standard than that which has been set as the minimum. The candidate must simply demonstrate a minimum standard of performance on a minimum number of competencies to obtain an overall pass on the test and complete that component of training. In order for standards–based assessment to prove a distinct improvement over current assessment procedures it is important that a strictly criterion-referenced system is adhered to. It is possible, although not necessarily desirable, to introduce grading of performance into a criterion–referenced system without deviating from its four basic requirements which are:

    1. Clearly defined criteria (objectives) that communicate instructional intent to all relevant parties.
    2. Assessment events that match the objectives, and that provide information about the achievement of specific competencies.
    3. Recording-keeping methods that preserve information about the achievement of objectives and do not simply allocate marks intended to indicate overall achievement but which are not particularly helpful to teachers, trainees or employers.
    4. Clearly defined decision-making rules for using objectives-based data to determine grades.

It is essential that a person demonstrates this minimum standard of competency as experts have set this standard having careful regard for what constitutes safe driving practice. Thus the standard cannot be varied. If the standard is demonstrated in a test performance, the person passes the test. If not, they fail. It is worth noting that the standard is one in which the candidate is permitted to make one or two minor errors and still pass.

The introduction of competency-based training in Australia is closely linked with changes to industrial awards and work organisation. New awards are being defined in terms of the skills workers must be able to demonstrate and there is a very much greater emphasis on the amount and quality of training in the workplace.

The introduction of competency–based training also means that there will be a significant increase in the amount of assessment which must occur. For example, most workplace training has not been formally assessed at all. Under a CBT system, however, most trainees can expect to be assessed on a number of occasions.

Adult learning

As trainees undertaking vocational study are all adults or young adults, it is worth considering what is known about adult learning which should be taken into account when planning assessments. Jennifer Rogers (1991) suggests that:

- Adults learn best through active, realistic involvement with the subject material and do not respond well to memorising vast tracts of information for which they can see no immediate application.
- Adults find learning itself intrinsically rewarding, and that successful performance is important for self image.
- Adults monitor their own performance through self evaluation.

If these three things are right it implies that it would be advisable to adopt certain principles when monitoring and grading the progress of adult learners. We suggest these include:

- using continuous assessment rather than final examinations;
- assessing adult learners after each unit of learning, which would minimise the necessity for adults to memorise quantities of information;
- using assessments which require the application of knowledge and skills in relevant vocational situations;
- using the principles of mastery learning and evaluation;
- comparing adult learners' achievements with set standards and their own earlier achievements rather than with the rest of the group. Self-paced learning and assessment on demand may also be valuable to adults who learn at varying speeds and also have other commitments outside the classroom;
- incorporating self–evaluation techniques.

When successfully implemented as part of the feedback component of training, the above suggestions can save the teacher much time. Boud and Lublin (1983) found that when learners are given a marking guide and the opportunity to practice peer assessment, self-evaluation skills improve greatly. Bruffee (1978) found that practice in peer assessment helps provide insight into what constitiutes good work and increases self–assessment potential.

In addition, Boud and Lublin argue that trainees should develop a capacity for self-assessment for the following three reasons:

- Self-assessment is a component of independent thinking.
- Self-assessment reduces dependence on external assessment.
- Realistic self-assessment is an essential part of many work roles.

This aspect of assessment is dealt with in more detail in chapter 14.

Assessment in a changing world

Purposes of assessment

Before we move on to look at assessment in practice, let's take a few moments to consider what assessment is and why assessment is such an important part of training.

1 Teachers or trainers, are often given the responsibility for assessing trainees. Occasionally, trainers might be required to assess trainees' potential to succeed in a subject; more commonly they are expected to assess their progress/ achievement in the instructional objectives.

- Assessment is a process which requires the collection of evidence on which to base a decision on a student/ trainee's progress or achievements in the instructional objectives of the subject.
- Information about a trainees' achievements may be of value to a number of parties. To the trainees themselves, to the teacher and to others such as parents and employers.
- Trainees may choose to modify their learning techniques or to increase or decrease effort as a result of assessment.
- Teachers may decide to modify teaching techniques, to increase or decrease the pace or to adopt specialist procedures.
- Employers are particularly interested in final assessments when interviewing and selecting new employees. As well, such assessments will determine an employee's classification and eligibility for progression under many new awards.

2 Assessment may be carried out at any point in the learning program. Exactly *when* assessment takes place depends to some extent on the purpose of assessing and the use which will be made of the information.

- Early in the program, information can be readily utilised to modify teaching and learning strategies and to diagnose difficulties. In other words to provide feedback to teachers and learners. Providing feedback is one very important function of assessment. This type of assessment is sometimes known as formative assessment. (The most informal type is oral questioning of trainees on an *ad hoc* basis.)

- A little further in to the learning program, as well as planning assessments to provide feedback, teachers/trainers are usually required to provide information regarding trainees' final achievements in various aspects of learning. Known as *summative* assessment, the information gained provides a summary of the learner's strengths and weaknesses after a certain period of instruction. Summative assessment does not necessarily occur at the end of a period of instruction; summative assessments may occur at a number of points throughout the learning program; the distinguishing feature of a summative assessment is that the grade or mark awarded will be included in a final summary of the trainee's achievement in the subject. If summative assessments do take place throughout the learning programme, the information gained can also be used to gain feedback, so it should be clear that the two types of assessment, formative and summative are not mutually exclusive.
- As we've seen, for adults, the formative aspect of assessment is one which is particularly important as a learning device. Learners want, *and need* to know how they are progressing and where they need to focus their learning.
- Competency-based training is particularly focussed on the summative role of assessment. It is concerned with achieving specific outcomes and we now turn to considering in some detail appropriate approaches to assessing the more common kinds of outcomes specified in vocational training programs.

Outcomes as the assessment focus

Vocational instruction has traditionally included two components of learning which, for a variety of reasons, have often been taught separately in the curriculum as *theory* and *practical.*

Psychologists have distinguished three domains or areas of learning that instructors are interested in. These have been referred to by Bloom (1956) in the following ways:

Cognitive domain

This includes all types of knowledge and thinking skills which the trainee is expected to acquire.

Bloom has further subdivided the cognitive domain according to the complexity of thinking skills. These subdivisions are (from Miller, 1990):

Knowledge	Memorising or identifying facts or concepts.

Comprehension	Understanding the meaning or intent of information.
Application	Using knowledge to deal with new situations or problems.
Analysis	Observing the underlying ideas that make up a body of information.
Synthesis	Putting together information in a form which is new.
Evaluation	Making a judgment about something based upon evidence, criteria or a set of standards.

The cognitive domain can be seen to range from lower-order to higher-order thinking skills. While higher-order thinking is considered by many to be too vague a term for some very important skills, it does serve to remind teachers and trainers that there is much more cognitive material to be acquired than lists of facts. Ennis (1989) provides a more specific definition and detailed descriptions of some of the higher order thinking skills which he refers to as 'critical thinking'. Critical thinking is defined as'reasonable reflective thinking that is focussed on deciding what to believe or do'. Creative thinking is included in the definition.

Psychomotor domain

This usually refers to the co-ordination of mental and physical activities in work of a practical nature, for example, bathing a baby, adjusting a carburettor, pruning rose bushes.

Affective domain

This roughly refers to attitudes, which are reflected in action, for example, attention to detail, quality control, cleanliness and tidiness.

Choosing an appropriate assessment technique requires careful examination of the learning outcomes which are required. For example, if the desired learning outcome is that the trainee, after the period of instruction should be able to advise clients on suitable products, then the assessment technique should focus on the trainee's skills in advising clients on suitable products. If the learning outcome states that the trainee should be able to diagnose and repair faults in a modern automobile, then the assessment technique should focus on the relevant diagnostic skills and should include assessment of relevant knowledge and of the psychomotor skills involved in repair.

One of the major changes required of assessment practice is the need to focus on the overall performance of a job as has been suggested in the discussion of the nature of competence in chapter 2. Traditionally, it has been considered acceptable to assess component parts of a job or a task and assume these can be added together into an overall outcome. That this is a reasonable assumption has been challenged by some employers who find that the new employee is not able to put together parts into whole in satisfactory manner—it may be that the task cannot be completed in the usual time or, that although parts of a task can be satisfactorily completed, confusion is the main outcome if the new employee has responsibility for the whole task. While it is not reasonable to expect the same standard of performance from a novice and an experienced employee, it does seem reasonable that assessment should attempt to focus on the combinations of knowledge and skills as they will be actually used in work.

For on-the-job training this is usually not difficult to arrange and may simply involve creating a situation in which the trainee can be observed actually carrying out the task(s) for which training has been conducted. Even here, however, there can be problems. For example, to assess a worker's capacity to identify and correct a production fault, do you artificially create a fault in a production line at a cost of many thousands of dollars in lost production or, alternatively, wait weeks until a real fault naturally occurs?

For off-the-job training this assessment is much more difficult. The single greatest practical constraint is invariably cost. Assessments which mirror work-place realities often require priority access to high-cost equipment or facilities and, in most situations, utilise high staff levels because assessment must be conducted by one-on-one observation. For most education and training providers, this level of resources cost is simply not feasible.

A related issue relates to the question of what constitutes 'realism' and is a question about the validity of the assessment itself. Most training programs, and this is especially so today, are concerned with producing workers who can apply their skills across a broad range of applications. Few programs are devoted to preparing people to work in specific, identifiable circumstances. The question thus becomes not an absolute one of 'is this realistic or not' but rather one of the degree of similarity between the assessment and the *range* of actual workplace manifestations which are possible and/or likely.

In a real sense, all assessment involves some kind of either generalisation or sampling from a very large range of actual applications. We are talking about a continuum and not an either/or situation. How appropriate a particular assessment event might be, then, is a matter of judgement. We know that the greater the realism, then the more valid the assessment. But as indicated, realism can be expensive. We must identify an acceptable trade-off between these two factors.

Some of the kinds of solutions which have developed over the years involve various forms of simulation. Possibly one of the better known of these is the pilot training simulator used by commercial pilots training on 747s and the like. These simulators cost almost as much as the real thing but are much cheaper to crash!

We will look at some other examples in the next section, however, the greatest drawback to wider use of simulations has been that most involve the management of a wide range of branching alternatives. For example, in a simulation in which the 'office manager' receives a memo requesting the purchase of a new photocopier for the planning section, she/he might elect to: agree; disagree; ask for more details; agree subject to a cost or other restriction; refer the request to a higher authority, etc. Each of these decisions would warrant a different set of subsequent responses from the assessor.

However, these difficulties are substantially reduced as the availability of computer software and hardware extends. Most current authoring software systems have the decision-making capability to respond appropriately to the wide range of likely responses. Many can even effectively handle unanticipated responses. This does not deny the very substantial work which is required to develop and test such systems. Rather it is to point out that simulations of this kind are now more accessible than they have ever been. As a tool of both teaching and assessment they are well worth further study.

Assessing the values element of critical thinking is a particularly complex issue which must be addressed when we assess higher-order skills such as analysis or evaluation.

For example, what single overall standard is applicable to assessing the performance of someone whose task is to evaluate a range of competitive tenders for supply of iron bar stock? Is the process involved in reaching the decision the focus of interest or is it the long-term cost achieved? Is it both? Neither? What is the criteria which will determine the 'best' decision?

The success of assessment systems which aim to utilise these global criteria will depend on the ability of trainers, educators, union officials and others to develop performance criteria which are both meaningful and assessable.

Of equal importance will be the need to allow for a range of 'right' decisions or outcomes. It is a relatively simple matter to assess against a rigid criteria such as 'least direct cost' but it is the intention of the changes to VET we have described that employees should exercise greater discretion in their work. It would be wrong then for assessment or training systems to be predicated upon the assumption of one correct answer. With this latitude in judging 'correctness' will inevitably come a greater variation in the judgement of assessors. What trade-off between reliability and true 'critical thinking' is to be acceptable?

A further development has been the establishment of the National Training Board (NTB) and the commitment of governments, unions and employer associations to working toward the establishment of national skill standards for all award-covered employees. Governments have strengthened the status of these standards by guaranteeing that they will be met by graduates of any accredited course, whether offered through a government institution such as TAFE or through a private, accredited provider.

Moreover, the link between these standards and industrial awards will, likely, mean that even non-accredited internal training programs run by enterprises will also be directed to satisfying these standards.

The NTB has identified four components of skill (NTB 1991;18):

Task skills: the knowledge and skills, and the capacity to apply these, needed to accomplish a task.

Task management skills: for management of the group of tasks to achieve the overall job function.

Contingency management skills: for responding to breakdowns in routines, procedures and sequences.

Job/role environment skills: for responding to general aspects of the work role and the environment.

The breadth of coverage implied by these four components reinforces and emphasises the greater importance now being given to the development of workers who are independent, creative, critical thinkers. There will need to be a corresponding change in the emphasis of our training programs including assessment approaches.

Assessing knowledge

Typically, cognitive material has been assessed using paper and pencil tests. This is a reasonable practice in some circumstances. However, a number of assessment experts have suggested that the sort of cognitive skill which is generally the focus of most written tests is the lower order skill of recall, which Bloom refers to as *knowledge*. Too often trainees are asked to do nothing more with the knowledge than to remember it and repeat it.

Of course, without that recall of vocationally specific knowledge, there is little hope of a job being carried out successfully but, in itself, a collection of facts is remote from performance, and being able to recall and restate facts is rarely required in a job.

The way in which facts or knowledge may be used on the job has been the subject of a paper by Mansfield (1990) who identifies three distinct applications.

Information transfer

At the simplest level, knowledge is a base of information which is simply reproduced on demand. In this instance, knowledge involves the learning and reproduction of facts on demand. This rarely occurs in job performance situations. Examples of when it does would be a salesperson describing product characteristics, or a teacher giving a lecture. However, such ability to recall and describe facts may have little intrinsic value on the job unless the salesperson or teacher is also able to demonstrate other crucial characteristics. For example, the salesperson may need skills in customer relations, skills in researching and assessing further information if the customer has an unusual enquiry about product, and so on.

So, in this instance, in order to assess a trainer's performance potential it would be necessary to either have a test of knowledge and a performance in the context in which it will be used along with the other performance factors.

Choice among alternatives

A second application of knowledge is where a selection must be made from a range of alternatives. For example, from a range of tools a trainee craftperson identifies the correct one for a particular task. In this cases it might be permissible to assess the trainee only in the cognitive domain although the ultimate outcome would be a performance.

Evaluative decision-making

A third and more complex application of knowledge is exemplified in the situation when there is no one correct answer but a number of more or less suitable alternatives. A dietitian consulting with a patient and recommending a diet to a patient would find it necessary to take into account patient food preferences, food availability, cost and so on. An appropriate type of assessment would be to present the information in the form of a problem to be solved which would reflect the day-to-day work problems of a dietitian.

Some suggested guidelines for assessing knowledge

- Find ways to assess knowledge as used in the context of typical work performance, for example, by questioning trainees while they carry out typical tasks as to why they choose a particular method, what other choices could they have made.

- Be clear about what aspect (or aspects) of higher order thinking skills it is intended to assess.
- Posing problems in novel but likely situations is one good way to ensure that the candidate is not simply recalling memorised facts.
- Be prepared to accept a number of alternative answers. Trainees who are encouraged to think for themselves will not necessarily reach the same conclusions as each other, or the teacher.
- Find ways to examine the thinking process rather than just the end result.

The in-basket exercise

Probably one of the oldest simulation techniques is the'in-basket exercise'. In this example, business trainees simulate, say, the decision–making role of an office manager as requests, information, memos, etc., arrive in her in-basket. The manager responds by requesting information, making decisions, and assigning work in a manner very like that encountered in work.

This technique has been most commonly used in business training to examine such skills as decision making and prioritising.

Such an approach requires that, as an assessment event, clear guidelines are provided for assessing the value of each decision, providing for appropriate consequent material to be provided, etc. It is clearly a procedure which requires substantial initial development but which, once operating, can be adapted as new situations emerge. Moreover, the technique allows for trainees to use the same processes to learn and practice the desired outcomes as will be subsequently used to assess them.

Patient management problems (PMPs)

PMPs are used in a number of medical and paramedical areas in Australia and the US. A variety of forms are used but all basically comprise a series of scenarios, and include at least the following elements.

- A written statement outlining the features of a particular clinical situation. The information provided might include irrelevant or, occasionally even misleading, clues.
- One, or often more, multiple-choice sets of alternatives for responding to the situation presented. These might include options for eliciting further information, carrying out remedial activities, or referring the case to a more experienced or specialist practitioner.

By using a series of such scenarios, a trainee can be led, step-by-step through a complex diagnostic or other procedure in a way which resembles real-life interaction with a patient. Moreover, as each scenario is independent of the last, errors made in an early section don't have a follow–hrough effect on later stages.

In some US examples, this concept has been generalised so that, at each step, the trainee is given feedback on their performance and future scenarios will vary depending on earlier responses. This is particularly relevant in situations where no single response is necessarily correct or even the best and a number of quite distinct approaches could all satisfy the criteria.

Assessing performance

The most common way to assess in the psychomotor domain has been to set up practical tests, which focus on the procedures or the product, or both. Usually practical tests require the trainee to undertake a limited task or part of tasks. Although it is acceptable to use such tests, it is now recognised that such activities constitute only part of what ensures successful work practice. If the working situation requires that the employee must plan, cost and finish the jobs, then it would be appropriate to also assess these skills. Some teachers and trainers are finding that assignments and project work are going some way towards bridging the gap between practical tests and on the job assessments.

Some suggested guidelines for assessing performance

- Assess in a real workplace situation wherever possible.
- Use real workplace tasks wherever possible.
- If the latter is not possible, create an artificial task which closely resembles the real workplace or which is a sub-set of the real task. This is often called a work sample or an extracted work task (Mitchell, 1990; 34-36).
- If even this is not possible, use a simulation. Even here, keep the simulation as close as possible to reality given safety, cost and related issues.
- When designing a simulation, focus on reproducing the critical features of the real task rather than the extraneous details. In particular, a simulation must enable an assessor to observe whether or not the trainee has demonstrated the essential performance criteria which have been specified.
- Depending on the learning outcome concerned, assessment should focus on either or both of:
    1 the processes involved in safely and effectively carrying out the task;

2 the product or outcome achieved.

- Detailed and clearly specified checklists should be provided in advance which enable the assessors to evaluate accurately and consistently the performance against the set criteria.

Some examples of good performance assessment practice

Objective structured clinical assessment (OSCA)

One relatively new assessment procedure which has been adopted by teachers in several health care training programs, and which could be adapted for use in other vocational areas, is the OSCA. (When used in non-clinical situations, the technique has been referred to as an objective structured performance assessment or OSPA).

The OSCA requires trainees to respond in a number of simulated situations derived from the real environment. Typically, about 12 situations are set up in an assessment area, and trainees approach each of these in turn, examine the information provided and respond as requested.

An example of an OSCA situation in nursing might be that the trainee is provided with charts and records relating to a patient and required to indicate steps necessary for future care. This would involve assessments of the trainee's knowledge base in an active situation. For example, criteria for successful performance might require that the trainee recognises from the records an emerging and life threatening problem and recommends appropriate action.

The problem just described could conceivably be presented to trainees in a written test. However OSCAs frequently involve simulated patients who can be questioned for further detail as would be the case in normal working life.

One of the advantages of the OSCA is that the trainee can be assessed in highly realistic situations without the disadvantage of unpredictablility that would normally be associated with working situations. In addition it is possible to offer all trainees essentially the same situation which satisfies the requirement that assessments should be fair. Rating trainees' performance is facilitated by providing assessors with criteria and clear standards of success.

An OSCA can be used whenever it is desired to assess a trainee's ability to integrate and use knowledge effectively in vocational performance, especially where interaction with clients is an important feature of the work.

Potential drawbacks are cost and the number of assessors required. Its advantages, however, flow from the fact that is both valid and reliable.

Objective structured performance assessment (OSPA)

A version of an OSPA is currently being used to assess trainees in a NSW TAFE course, demonstrating for in-store promotions.

Trainees role play an in-store demonstration which is videotaped for self, group and teacher evaluation. A check list of performance criteria is provided so that trainees can quickly improve their self-evaluation strategies, and identify aspects of their performance which require improvement.

Phased simulation

This is a related technique which has been used in a number of areas but which will be illustrated by reference to its use in the training of electrical/electronic tradespeople.

In this case, a small number of identically configured work-stations are established with a range of equipment typically found in an electrical/electronic workshop. In some cases, the equipment may be miniaturised or simplified rather than being fully representative of real-world conditions.

Trainees at each work-station are given a written or verbal explanation of their task and a worksheet on which they are to record their progress and which will identify their reporting stages. The task is broken down into a number of discrete stages at the end of which the trainee must stop and advise one of the assessors.

As a simple example, the trainee's task may be to select from a range of supplied components those that are required to construct a circuit shown on the instructions. Having done so, the trainee stops and asks the assessor to check the selection. If the selection is correct, the trainee moves on to construct the circuit. If not, the assessor will advise the trainee that the selection is not correct but will give no other details and the trainee then re-evaluates and modifies the selection. If the second selection is incorrect, the assessor corrects the selection and allows the trainee to move on with the trainee constructing the circuit, checking the circuit for correct performance and the like. Again at each stage, the trainee's progress is evaluated.

Full-scale simulation

The approach used in assessing the greater proportion of commercial cooking skills both in colleges and in the growing number of in–hotel schools is to use a work sample. Typically, a small group of trainees is given an assignment. Early in the course this might be a simple and restricted task, such as to prepare a medium rare steak. In the later stages, however, in recognition of their greater experience, trainees will be presented with a task which requires demonstration of a wider range of skills, including higher order thinking skills such as evaluation. The task, for example, might be to plan and then prepare a menu for eight people at a cost of less than $12 per head, and which emphasises fresh fruits. Clearly, there are many alternative and acceptable approaches, and the assessment process must allow for these.

In most cases, the assessment will take place in a commercial kitchen which is at least as well equipped as that to be generally found in the industry. A number of assessors will circulate among the group, observing their preparation, planning, presentation skills and the like. The assessors will be required to use a detailed checklist which identifies and describes clearly the skills to be demonstrated and the standard of performance which is acceptable.

Summary and conclusion

It is clear that assessment is becoming a major area of skill which must be possessed by all those who operate within the new training environment. As Thomson (1990) has shown, however, it is a skill which has been greatly neglected in the past. In particular, workplace and private trainers, for whom assessment has, in the past, been a low or non-existent priority, must now move quickly to develop these skills.

Good assessment is not hard but nor is it easily achieved. Most of the examples of good practice given above involve a degree of development time which is greater than many traditional approaches. However, the move to a competency-based training system is based upon the belief of governments, employers and unions that the cost is necessary for the longer term survival of the Australian economy.

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Chapter 13

Recognition of prior learning

Ruth Cohen

The recognition of prior learning (RPL) is a key element in the implementation of the proposed competency–based training framework discussed in chapter 1. In an era of workplace change, increasing amounts of training are carried out within firms and, as Ruth Cohen points out, recognition of this learning is essential for individuals' careers. But it will also have beneficial effects for post-secondary institutions as they will enrol more motivated self-confident students in higher levels of their courses and for employers keen to develop better links with academic institutions. A willingness by institutions to embrace RPL demonstrates a commitment to the adult learning principles outlined in section 2 of this book. It accepts the capacity of adults for self–direction analysed in chapter 5, the possibilities of informal learning discussed in chapter 7, and the wider commitment to experiential learning and critical reflection outlined in various chapters.

In this chapter, Cohen describes the current state of RPL in Australia and provides a series of case studies illustrating how it would work in practice. The positive outcomes she identifies far outweigh any difficulties in implementation and Cohen suggests that concerns raised about RPL are exaggerated or unfounded.

The practical suggestions made in this chapter about how to actually undertake assessment of prior learning are taken from actual cases in the USA and UK and are an easy-to-follow guide for institutions and individuals. Like the other chapters in section 3, this chapter discusses a set of assessment strategies which are an important part of creating a more efficient labour market.

Introduction

June is thirty-eight years old and has two teenage children. She left school at sixteen and worked in a bank. She is interested in business and management and assists her husband with the accounts for his electrical business. Her recent activities have included elected membership of the local council for two terms, treasurer of the local Parents and Citizens' School Board, cub mistress, house renovation to accommodate her disabled father, and publicity officer for the local environment group to keep public parklands from developers. She has worked in her current position as office manager in a small printing firm for eight years and is adept at using computers for word processing and spread- sheets. She has attended several short courses to develop her computing skills and has trained three of her staff on new software applications.

From next year she has negotiated a half-time position with the same company. At last she will have time for herself. She is considering returning to study in order to get a qualification, a more interesting position and, hopefully, a secure salary. She thinks she might enrol in a Bachelor of Business course, and feels confident she has a good working knowledge of several of the basic subjects as a result of her experiences.

June wonders whether any of this will count towards her qualification. Should it?

Recognition of prior learning is designed for people like June who wish to have their experience-based learning count towards academic qualifications.

What is recognition of prior learning?

Recognition of prior learning is the procedure awarding adults formal academic credit for competencies gained through work and life experiences. It has workplace relevance by acknowledging skills which can be applied towards lateral or upward career development. Terms commonly used in Australia and overseas to describe this concept include:

- Recognition of prior learning (RPL)
- Recognition of current competency (RCC)
- Assessment of prior learning (APL)
- Accreditation of prior learning (APL)
- Credit for prior learning (CPL)
- Assessment for prior experiential learning (APEL)

RCC is probably more accurate as a descriptor, with its emphasis on current competence rather than prior learning. 'Competency' used in its broadest sense includes not only skills, but attributes, attitudes and knowledge which apply in work-based and informal learning. However, the term *recognition of prior learning* (RPL) is more commonly accepted to identify this concept in Australia. For this reason, this book uses the term RPL *(recognition of prior learning)* because, of the two, it is more commonly used in Australia.

The process of awarding credit for RPL is not new. RPL procedures are now very advanced in the USA where they have been operating effectively for over twenty years. There are over 1700 tertiary institutions acknowledging and accrediting relevant adult experience and the learnings acquired outside formal educational institutions. Adoption of this approach has led to the emergence of a range of assessment techniques which are used extensively in the USA to accredit this learning formally. This has been a major philosophical shift from the idea that learning can only occur in an educational institution. Since the 1980s, many universities and polytechnics in the UK have also implemented these practices and there is growing use of this concept in industry and the public service.

RPL is different from transcript credit, that is, giving credit for formal learning achieved and credited at another institution. While transfer of transcript credit is commonly used, and is certainly not automatic, recent government concern for establishing articulation between all levels and sectors of learning is likely to increase its application.

What is different about RPL is that it accepts the reality that much adult learning is gained through experience, which may be additional to, or separate from, formal learning. Strategies to assist individuals capitalise on their experience are part of the RPL procedures. RPL is not concerned about how or where the learning was gained, but the range and levels of competence which an individual can prove by documentary and other evidence.

The Australian setting

This section identifies some of the relevant societal and workplace developments which have precipitated recent changes in the educational culture and increased the importance of developing methods for accrediting competency. It is from this context that the issues in recognising, assessing and accrediting prior learning are addressed.

In times of rapid technological, social and cultural changes, appropriate skills, attributes and knowledge may well be learned as effectively in the workplace as in educational institutions. Universities, Colleges of Technical and Further Education and other adult educational providers in Australia are now investigating how to recognise and give credit for competencies which may be equivalent to part or all of particular subjects in their course offerings.

With increasing numbers of mature adults pursuing formal tertiary qualifications, tertiary education providers have accepted the impact of this change in the student body by reviewing course provision, structure, articulation and accreditation. Many adults now seeking course entry have already developed a high level of competence in their work areas, despite this absence of formal qualifications. Many adults work in specialist areas for some time before tertiary institutions make provision for newly emerging needs, given curriculum lag time. Also, in very rapidly changing areas, course requirements may now be substantially different, so previous qualifications no longer are current.

When experienced adults decide to enrol in basic formal courses to gain qualifications or opt to study for higher qualifications, they may be reluctant to devote time to study what they already know. But teachers and academics privately acknowledge that these students' experiences adds richness to courses for all and are keen to retain them in their classes. To capitalise on adults' motivation and provide qualifications in the shortest possible time—study is often undertaken part-time while still continuing full-time work—educational institutions are developing formal mechanisms for recognising learning from experience. This will encourage enrolment by shortening the minimum time for the completion of the courses through offering credit to potential students who already have competencies equivalent to course objectives.

Credit for learning from experience is not the same as advanced standing or transcript credit. The RPL procedure is designed to recognise competency at a given level rather than to force students to take alternative advanced courses and thus overfulfil the institutional requirements. Subjects assessed and credited are included on the student's record, and operate as if the student had completed the formal course. Such credits can then serve as prerequisites for more advanced levels.

Tertiary education institutions have always provided some mechanisms for advanced standing or exemptions on the basis of prior educational achievement. Relatively few students have taken advantage of this possibility, perhaps because it is usually included in the academic rules of the institution and not widely advertised. Although each case is treated on its merits, exemptions are usually limited to transcript credit—a pass in a similar subject at an equivalent level from an equivalent formal educational institution. Some universities are more generous in awarding exemptions than others. There is now increasing pressure on universities to give automatic credit for similar subjects passed at the same level in other Australian universities.

NSW has begun an extensive system of course articulation between TAFE and universities in a number of courses and most universities in NSW are partners to these agreements. These agreements specify the credit granted by universities for courses successfully completed in the TAFE system. For example, the completion of a Land Usage Civil Engineering Certificate (TAFE) earns credit for Contextual Studies 2 in the Bachelor of Applied Science (Building) at University of Technology, Sydney. Similar arrangements occur in other States.

The context of institutional and workplace education

In Australia, RPL is fast becoming one of the major elements for tertiary educators to consider when developing or reviewing structure, course content and articulation of education and training courses. It is particularly relevant for teachers who deliver training in educational institutions and trainers in the workplace, given the increasing overlap between formal education and workplace training. This change arises from the increasing importance of training in the workplace and the moves towards greater flexibility, mobility and award restructuring in industry and the public sector.

As a result of major legislative and industrial changes, educational providers and employers have had to rethink the purpose, structure and delivery of their educational and training programs. Recent contextual and structural changes in industry (a detailed account can be found in chapter 1) have stimulated training providers to demand accreditation and certification at all levels of industry. The Training Guarantee Legislation and the establishment of national competency standards (National Training Board) have also stimulated State assessment bodies to recognise a wide range of training providers who meet specific training standards in addition to formal tertiary education, including in-house and external industry training, consultants, professional bodies and training agencies. It is when these training ventures of industry and educational providers are linked, accommodating the needs of award restructuring and multi-skilling with support from trade unions, that recognition and articulation can be offered using RPL.

Concurrent with industry changes, there have been major changes in formal educational provision. Higher education amalgamations, with the increasing concern for larger scale cost-effectiveness, emphasis on non-government funding and acceptance of the user-pay philosophy has higher education adopting a more entrepreneurial and economic rationalist character. Arising from the concern that tertiary education providers need be more responsive to client groups and industry, there has also been emphases on flexible course entry and exit (to increase institutional productivity and make courses more accessible), articulation between all levels of certification, and acknowledgement of the role of industry training. State education and training foundations have acted as conduits, formally linking industry and education.

Demographic changes including an increasingly healthy ageing population create additional demands for on-the-job skilling and re-skilling to update and/or develop competencies. More effective application of access and equity principles by governments and educational institutions, especially relating to ethnic and cultural minorities, women, people with disabilities, and skilled migrants with formal qualifications not recognised by Australia, have increased the consciousness of educational providers to appreciate the needs of a broader group of potential students. The decrease in current youth employment places even further demands on higher education now and in the future.

Impact of these changes

For industry, these changes will lead to greater emphasis on training and its accreditation as it becomes a more integral part of the industrial culture. Universities are now also marketing training programs in a variety of fields and extending their range of clients. With, for example, TAFE developing in-house commercial/industrial training programs and external short courses as well as mainstream courses, there could be considerable training provision available for the same clients. This is wasteful and sets up unnecessary duplication and competition between training providers.

Employees undertaking industry training programs with equivalent learning outcomes to subjects offered by educational institutions may apply for credit if the institution accepts RPL. If assessment is favourable, then RPL might mean entry with credit towards the formal course. Where the match between subjects is not so clear, RPL assessment might lead to entry to the course without entry qualifications. For institutions, RPL is likely to increase the number, entry levels and diversity of course applicants and, almost incidentally, increase the access and equity provision of education. There is also likely to be an increase in the proportion of advanced level to basic subjects offered.

Benefits of RPL

When RPL is implemented, there are considerable benefits at a number of levels. These apply to:

- applicants
- academic staff
- educational institutions
- employers
- the community

It is wasteful to require students to repeat learning already acquired in another setting, whether it be theory or practical. For students, reduction in fees is a major factor in favour of RPL. It is quite common for students in the US and the UK, even allowing for the costs of assessment, to have a 20–25% reduction in course fees resulting from credit awarded through RPL. Failure to gain tertiary qualifications may adversely affect the career progress of experienced adults. Experience from the Polytechnic of East London (UK) suggests that under-qualified women are especially keen to take advantage of these opportunities, particularly if this recognition assists them to gain entry to courses from which they would otherwise be excluded.

All students gain greater self-esteem when competencies acquired in the workplace or through self-directed study programs are acknowledged and credited. Intrinsic motivation is heightened when the course requirements are challenging and relevant and build on existing strengths. The case study of John Martin (Mandell and Michelson 1990, 38) demonstrates this.

- John works in a construction firm and has worked his way up to his present level of general manager. In the process he has taught himself accounting, bookkeeping, production management and construction materials utilisation. Fearing that the business will close, John aims for a degree from a college that awards credit for experiential learning. He has a very focused approach and wants to stay in the same industry. Once accepted into the course, he is concerned about how his expertise compares with 'young kids' out of computer school or in MBA programs. But in the process of completing a portfolio (an extensive profile of his previous learning from a variety of situations, especially the workplace) John's self-respect is enhanced as the portfolio documents and confirms what he knows. Further research in the area—as a part of the portfolio requirements—will also appraise him of current and likely changes in the area and complement his industry experience.

While it is most common for credit to be awarded for introductory subjects, skilled persons working in technical areas may be given credit for higher level specialist subjects. For staff, changes in the level of enrolments through implementing RPL reduce the need for introductory courses and increase opportunities for teaching on advanced courses and engaging in research activities with advanced students.

For institutions, the decision to implement accreditation procedures through RPL usually requires course review—the objectives, structure and outcomes—and provides an opportunity to develop closer industry links. Courses with competency-based outcomes have clearly-determined objectives and prerequisites can be identified. An example of a competency-based objective is:

> Identify the knowledge and skills currently needed by packing operators at Smiths Biscuit Factory using two different needs assessment instruments (from Delphi, nominal group technique or critical incident).
> Standards are developed for each objective to indicate the levels of achievement and examples of appropriate outcomes act as a guide for assessors.

In well-designed courses, assessment methods closely match the competencies and make it easy to apply RPL methods. The sequencing of subject matter is also carefully planned to allow students to capitalise on what they know and begin at the point at which their knowledge is weak. Courses benefit from this review process, often resulting in more open entry, greater structural flexibility and more diverse methods of delivery and assessment.

For institutions, higher productivity (for example graduation rates) results when credit for RPL is awarded. Higher-level subjects, where the greater emphasis is on independent work, might mean fewer classroom resources are needed, with further economies in the use of plant and other resources.

For employers, development of mechanisms for RPL enhances relationships with accrediting educational providers through joint industry/education ventures. Credit for learning in the workplace offers incentives—apart from financial rewards—for employees to upgrade their skills and qualifications. Industry training may be reviewed or upgraded to meet the entry requirements and assist employees' access to tertiary education. As well, more efficient responses to changing industry needs are possible when educational providers are intimately involved with on-going industry developments and training.

Increased community awareness about the content, relevance and standard of educational courses at tertiary level may result from information about RPL by institutions and employers. The development of information sessions as part of the introduction and orientation process may increase the desire for qualifications when gaining credit based on work and life experiences is possible. The possibility of completing courses in shorter time is a great incentive.

University experience in the US indicates that offering credit for learning from experience encourages additional enrolment, particularly at higher levels in Bachelors' or even Masters' courses. For example, targeted publicity for RPL along one Metro line in Washington DC resulted in a significant increase in Hispanic and Black students from the particular suburbs through which this line passed. Universities which have well-developed RPL programs such as Empire State College (State University of New York), the American University in Washington DC, and Thomas A Edison State College enrol many students from ethnic or minority backgrounds, lower socio-economic groups, or women who would not have thought of enrolling but for specific publicity and helpful orientation programs. Many colleges conduct orientation programs at set times (Cabrini College has monthly sessions) and advertise locations in advance.

Empire State College (State University of New York) offers a 4–credit course to assist students making the transition to tertiary education. The course deals with expectations of college-level learning, information about the structure of colleges and universities and provides learning experiences to develop academic skills. These introductory learning experiences empower new students through helping them to grapple with feelings of inadequacy and marginality on entry to College. At the same time they are developing their understanding about higher education while working with others in the same situation (Shipton and Steltenpohl, 1990, 119).

A major focus of these learning experiences is the opportunity for a self-appraisal of their potential as students, by integrating various diagnostic instruments (for example, Kolb's Learning Styles Inventory and the Clarke Reading Self-Assessment Survey) with skill building. This takes place in a supportive group setting where the emphasis is on how to learn.

Relationship to adult learning principles

In many ways, RPL involves the application of adult learning principles, including:

- student involvement in determining appropriate courses;
- recognition by academics of outside commitments;
- the importance of not wasting time;
- a desire to achieve new competencies;
- a need to have experiences recognised and valued to maintain self-esteem;
- motivation to learn what is immediately relevant and applicable;
- the need for challenging opportunities;
- a concern for future prospects

Development of joint ventures

One of the most exciting outcomes arising from recognition of prior learning has been joint ventures developed between educational providers and workplace training. In Australia, existing industry-specific training programs might be credited towards TAFE or university qualifications. To implement these accreditation procedures might involve evaluating the workplace training programs, reviewing and accrediting trainers, modifying existing training programs and/or assessing the trainees as part of the training exercise. Where assessment is not part of the training program, the educational institution can train and accredit assessors. Account must be taken of the validity and reliability of assessment to ensure credibility of any joint venture courses.

By contrast, formal educational courses or acceptable modified versions, previously conducted at the institution, are now being delivered at the workplace—a further illustration of how industry needs are being acknowledged and met.

As indicated earlier, the US has provided the lead in developing methodologies for assessing and recognising prior learning. The US has also been a leader in developing joint venture programs between specific industries and educational providers. Many of these approaches derive from work by the Council on Adult Experiential Learning (CAEL) a major professional organisation which in the US has been active in initiating, developing, implementing and monitoring progress in RPL. In order to support the work of the 1700 universities and colleges and promote a range of joint venture methods, CAEL holds a major conference each year to support these developments and provide a venue in which academics and industry trainers can together develop skills of assessment and update on recent events.

In recent times, some joint venture efforts have resulted from industries being in decline or no longer seen as 'ethical', for example sections of the timber industry in the south where unemployment is increasing. Many enlightened managers have assisted employees to gain marketable skills when facing redundancy through supporting formal learning activities that acknowledge their employees' prior experience. The Council for Adult and Experiential Learning (CAEL) has acted as broker for many such companies and a range of educational institutions.

In the US, many non-formal, non-certificated courses (some short and intensive, others of longer duration), such as those offered by IBM, Bell Telephone or public organisations have been accredited by the American Council on Education. This National Guide to Educational Credit for Training Programs is updated regularly and assesses training programs as equivalent to all or part of a particular College or University course. The American Council on Education also issues a Guide to the Evaluation of Educational Experiences in the Armed Services setting out credit available for courses undertaken in the army, navy and air services. (It is interesting to note that the earliest developments in the US in this area followed World War II, when returning officers wanted their skills recognised by universities.)

Countries in Europe, too, have developed systems for recognising prior learning through the use of challenge tests or competency-based assessments in joint venture training programs. Barkatoolah (1989) examines some of the other options currently being trialled in France to extend the common rather mechanistic practices of using cognitive criteria or psychological tests. She notes that recognition of prior learning may serve three functions: validation of work and life experiences for award of qualifications without further academic work, entry to specially designed training courses which will count towards a degree, and increased internal job mobility through recognition of work and life experiences. An elaborate interview and written procedure must be undertaken to provide sufficiently detailed information for institutions and industry, taking account of subjectivity and political bias.

In the UK, the National Council for Vocational Qualifications (NCVQ) has developed a scheme for assessing vocational competencies using national competency-based standards. These are being tested and modified for use in RPL in a great number of projects which have been funded under the auspices of the NVQC. One such project was conducted by Stroud College of Further Education, with the Gloucestershire and Wiltshire Local Education Authorities. This research project was conducted between 1988 and 1990 to assess work-based learning, working with small firms (including hairdressing, vehicle motor repair and clerical) and educational institutions as joint providers of accreditable training. Assessors from the local colleges and the workplace designed and implemented a range of assessment procedures including self-assessment, using the National Vocational Qualifications (NVQ) as a guide. Where learners and assessors disagreed in their competency assessments, it was often identified as under-assessment by the learner (Case Study 4 in Unwin, 1990).

Other joint training projects have provided employees with recognised skills. After implementing the NVQ training program, Courtaulds Grafil, Coventry, (Europe's largest producer of carbon fibre) in conjunction with Hinckley College of Further Education, their press release advised:

> For the first time, process workers in the textile industry are now able to have their skills properly recognised. This is not only a first in the textile industry, it is the first national vocational qualification for process workers in any manufacturing industry. In giving formal recognition to the skills at the point of production, the industry is providing itself with a sound foundation on which to build a meaningful training programme relevant to the needs of the future. (Case Study 11 in Unwin, 1990)

Recent joint venture developments in Australia

In the late 1980s Australian educational institutions began to set up joint ventures with industry. TAFE NSW now accredits a number of these courses which are jointly sponsored by TAFE and an industry partner. In 1991 the Computing and Information Services Industry Training Division implemented a system for recognising prior learning in the workplace and providing employees with a TAFE statement of competence for Information Technology skills. Another recent addition is the Advanced Certificate in Chemical Industries Technology accredited by TAFE and conducted on-site at ICI.

Joint ventures between industry and tertiary education providers are increasing and often use RPL procedures for accrediting in-house certificated learning and on-the-job training. In NSW, the University of Technology, Sydney has developed an Associate Diploma in Adult Education (Training) course for Telecom trainers across Australia where they have the opportunity to complete the course in less than the usual minimum time. This course is offered in distance mode to accommodate those who work in remote areas using a competency-based approach. RPL is an important component, as many trainers have qualifications in specialist, technical, and management areas. But although they may have considerable human resource development experience they have limited formal qualifications for training.

A Victorian example is the Applied Science (Technology Management) program at Deakin University which, in conjunction with Box Hill TAFE, runs industry-specific courses for employees in the Ford and Nissan companies with a strong RPL component. These on-site courses use self-paced computer-managed learning (lap-top) and one-to-one tutor-contact.

In keeping with award restructuring principles and the need for articulation, the Technology Management courses have three different points of entry depending on previous experience. Articulation exists between the certificate, associate diploma and the degree and students can exit from the course with qualifications at any of these levels. Initial evaluations of the first two cohorts in the Deakin University Ford/Nissan project provide evidence of the interest in the workforce for the opportunity to gain formal qualifications while training on the job. A number of those completing the certificate level have expressed interest in proceeding to the Associate Diploma.

Another innovative Victorian joint venture project also begun in 1989 linked Broadmeadows TAFE, the Victorian Education Foundation and Ford Australia. This project established procedures and criteria to recognise skills and knowledge acquired through formal industry training and work and life experience. The evaluation report of 1991 affirmed the acceptance of RPL by all groups and described the ongoing progress of the scheme. In his earlier report on the preliminary outcomes of this project, Brown (1990) described three phases when implementing RPL, which have now been used by other organisations. They are:

> *Request*: This is the procedure for access to the learning assessment process for potential applicants, and allows them to consider whether their experience relates to vocational and educational outcomes.
>
> *Assessment*: Following an interview to explore possibilities of RPL, this phase deals with issues which can be easily or quickly resolved.
>
> *Review*: The review concentrates on the more difficult areas of assessment where an appropriate assessment technique is necessary to reach a decision.

At the conclusion of this process, applicants may have credit for prior learning granted, or denied, or be given the opportunity to undertake further assessment.

With the growth in training programs for specific purposes in Australia, it is likely that similar competency documentation schemes to the American Council on Education's National Guide to Educational Credit for Training Programs will be developed for the Australian context. Efforts by the National Training Board (Australia) to establish national standards and identify national competencies are likely to increase the number of joint ventures and also opportunities for employees to gain course entry or credit towards formal qualifications. Standards are being developed for a range of training activities in the public sector, private corporations and the services.

Learning at all levels will be involved. A 'skills bank' at technician level has already been proposed to document training in particular and generic industry skills for a number of industries Australia-wide. For individuals, this documentation provides evidence for promotion or entry to other courses.

For example, the National Training Board is developing a set of national competencies applicable to human resource development. This might provide the basis for comparative assessment of non-credentialled training and be instrumental in recognition of prior learning. By using objective criteria couched in competency-based terminology, the resultant national competencies should be readily assessable. Care will be needed to include competencies which are 'softer' but critically important in training such as appropriate attitudes and values. (For further discussion on competency standards for professionals see Gonczi, Hager and Oliver 1990.)

Case studies illustrating application of RPL

"How can students possibly know this subject if they haven't learnt it from me?"

We now come to some of the practical aspects of RPL and why educators in particular need to change their mindset about where effective learning takes place and look openly at additional possibilities. Adult educators have to come to terms with the great variety of places where learning takes place and acknowledge that universities, TAFE colleges and other tertiary providers no longer have the sole mandate for developing and accrediting competencies.

Try this two part exercise on your students or trainees (You might like to join in yourself)

- Ask each person in the group to select an area of skill or knowledge in which he or she feels really confident and describe it to someone else. (5 minutes)

- Now ask how they could *prove* their competence in this area? (5 minutes)

According to educators who have used the above exercise, (and my own experience using it in a industry and academic settings), it is highly likely that the competencies people identify will be those developed outside a formal educational setting. Isn't it strange that competencies which spring immediately to mind are those learned in informal learning contexts or in the workplace, even when this question is posed within the confines of an academic institution? What does this tell us about learning?

- If you are a teacher ask yourself:

Can students learn the competencies you teach just as effectively anywhere else?

- If you are a *trainer* in the workplace, ask yourself:

Are the competencies trainees develop in your training sessions taught in a formal course in an educational institution?

If you answered yes to either question, you need to pursue the possibility of RPL to benefit your students/trainees.

The following examples illustrate scenarios where RPL could be a useful strategy:

Case study 1

After thirteen years in a training position Ian needs a change. After giving notice he leaves immediately, taking three months long-service leave. Ian wants this vacation before trying for a different and more challenging position. His valuable on-the-job experience has always been recognised by the company, but he has few formal qualifications. While on holidays, his house is ransacked and all records of qualifications and employment experience as well as the workshop manuals he designed are destroyed. The vandals even destroy the computer. As if that were insufficient, to add to his woes his previous workplace is burnt to the ground following a freak electrical storm.

Notwithstanding these events, in the face of financial realities and the realisation that nothing he knows and can do has been affected by these disasters, he applies for a number of positions which seem appropriate in terms of his background and experience.

How could Ian demonstrate his competence without any supporting documents?

Case study 2

You are a mature adult who has been teaching at night in a tech-nical area as well as maintaining your regular day job. You are keen to upgrade your technical qualifications in order to pro-gress—and the time to do this is now. You also might want the option of a full-time teaching or training position in the future as you enjoy the teaching. You are thrilled to be accepted in this highly competitive tertiary course, so give up the night job and reduce your workload to a four-day week in order to increase your chances of academic success.

After three weeks of classes, you realise that your breadth of experience and wide reading covers most of what is included in the first year and a half of the three year program. You apply for exemptions and are angered when your experience and competence count for nought. The course director insists that the only way to really learn this material and gain accreditation is by completing the full formal course as presented to all the students.

What evidence can you bring to persuade the director to review this decision?

Case study 3

Kris, now acting manager of a small information services company, enrols in an Advanced Certificate Course in Technical Management to upgrade relevant skills and, more especially, to learn effective use of professional language. Kris finds all the communication (oral, reading and writing) difficult due to first language interference but, since communication is essential for this job, improving these skills while updating technical knowledge seems the best approach for long-term career success.

Kris wonders why some of the basic introductory sections —it is a modular program—are not optional depending on previous skills and experience. Many others in the course are also concerned that no assessment is made of prior experience or competencies. Kris only wants to choose areas of study relevant for the current job situation and not waste nights for nothing, so that additional attention can be devoted to the communication area.

What should Kris do?

Case study 4

You have been the proprietor of a expanding and profitable real estate agency for eight years. As a woman, you have had to meet normal business requirements ensuring increased profits (which you have), but also to combat sexism which was rife in the industry especially for women at management level. In both these areas your negotiating and management skills have been tested and confirmed as effective.

You are now keen to move beyond the real estate industry and develop your capacity for senior management. You are seeking a scholarship in the Faculty of Business and Administrative Studies to increase your qualifications and ensure an exciting and demanding career.

How might the Scholarship Committee assess your experience?

Questions which arise from these case studies

Should people be given academic credit by an educational institution for experience-based learning, such as on-the-job learning, self-directed study or industry training programs?

Issues to consider:

- The extent to which self-directed learning should be recognised.
- Are there circumstances in which effective learning can only be gained within a formal educational structure.

- The ways in which clear competence standards and criteria are identified in order to distinguish the learning from the experience.
- The relevance of amount of time spent gaining experience.
- The selection of assessors and the standards that will be applied.
- The validity and equity of the assessment procedures.
- The importance of determining students' current competencies validly without lowering course standards.
- The implications of RPL on criterion-referenced grading procedures with the result that all students will be graded pass or fail and excellence no longer be acknowledged.

What are the implications for course design and delivery modes if all students do not have to complete the full program in a particular set order?

Issues to consider:

- The need for subjects to have clearly-identified competency-based objectives.
- The rigidity necessary in sequencing the course content.
- The use of a modular structure where each subject deals with a discrete and complete set of content for the particular level.
- The concern for flexible, individualised and continuous assessment programs, perhaps using individualised contracts rather than the group lock-step approach.

What are the implications for staffing and allocation of financial resources?

Issues to consider:

- Who is responsible for publicity about credit possibilities for competency recognition?
- How to maintain equity and efficiency of staffing allocations when courses include some students enrolled for only part of some subjects.
- How to establish training arrangements to develop appropriate advisory skills for counsellors and assessment skills for academics and teachers.
- The methods for cost recovery for staff time spent on assessing prior learning.
- The cost to potential students of assessment for competency recognition.

Should there be limits to credit offered by educational institutions for a course ?

Issues to consider:

- The limits to the amount and levels of credit awarded on the basis of RPL.
- The difficulties of awarding credit for part of a subject.
- The implications of being granted an exemption or a credit.
- The way credit resulting from RPL will be identified on a transcript.
- The standing of a qualification from a given institution if a large portion is awarded as the result RPL.

What contribution do mature and experienced adults make to the learning of other students? How else could this be achieved?

Issues to consider:

- The practice of retaining experienced and mature adult students in your class without disadvantaging them by withholding RPL.
- The costs of repeating learning which has already been acquired:
  to the individual
  to the institution
  to the community

Translating RPL theory into practice

The issues identified above are often raised as concerns prior to the implementation of RPL. Interestingly, many of these concerns disappear when RPL is incorporated into the normal educational procedures. In contemplating RPL, there are two aspects for institutions to consider—the academic and the administrative.

Academic concerns centre around entry equity, advising, maintaining standards, developing appropriate procedures, training staff and assessment practice; administrative concerns usually refer to funding, staffing, timetabling and other resource implications.

Assessment using RPL may mean credit being given for a particular subject, a part of a subject or for unspecified credit points. In the US, where university and community college courses generally offer a large number of genuinely elective credits, in some cases up to a quarter of a degree course, awarding credit may not exempt students from taking core or basic pre-requisite subjects. In Australia, the number of electives is far more limited in university and TAFE courses, so credit will generally be assigned for particular subjects.

Some institutions prefer assessment to be undertaken by individual academics, others by a team. In many instances, the student counsellor also provides input into the process. At Empire State College, State University of New York (an institution which has achieved world-wide recognition in this area) teams of three assess each applicant. The team includes at least one person from the academic area and one from another discipline.

The American University (Washington DC) relies on the academic in charge of the subject to determine the appropriate amount of credit. Here, students enrol in portfolio courses under the guidance of a counsellor. The academic may advise the counsellor on how to identify the learning most suitable for the subject or the type of evidence required.

However, whichever way the institution chooses to implement RPL, especially when using the portfolio method, the process is lengthy, complex and requires real commitment from the student and genuine support from the institution.

Assessment fees

The question of charging for assessment which may or may not be successful in achieving credit is a vexed one. In the US, tertiary tuition fees are very high, so most US institutions charge separate fees for the assessment process, though these charges are usually less than regular subject fees. Where part of the assessment process includes enrolment and attendance in a preliminary subject for the production of a portfolio or profile, credit points may be allocated for this subject independent of the other accreditation results. Fees for this subject are similar to that of other courses worth the same number of credit points, though additional fees may also be charged if assessment for credit in other subjects is pursued.

Whichever method of compensation for assessment is adopted, consideration needs to be given to access and equity principles, to ensure that no student will be disadvantaged on the basis of personal inability to pay. The roles of advisers and assessors are usually separated during the portfolio process, with different personnel responsible for each aspect. From their experience at Greenwich University, Bloor and Butterworth (1991) endorse this view because of the importance of ongoing contact with the counsellor. This needs to be taken into account in determining to whom or to which section fees are directed for proper cost recovery.

Where assessors are paid in addition to their academic salary, pay should be for time spent or number of students assessed, rather than the amount of academic credit awarded.

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Whitaker (1989) asserts that fees should never be related to the amount of credit awarded as this may inject a profit motive into the procedure and inaccurately reflect the true costs of assessment.

Prior learning combined with individual course design

Empire State College (State University of New York) and Metropolitan State University, St Paul, Minnesota offer students the opportunity to design their own degree programs, because "graduation requirements fitting everyone into the same patterns often frustrate and are not appropriate for adult students." (Harvey, 1991, 131) Much of the program planning result from entries in the student's portfolio. These may highlight existing areas of strength which can be extended or identify new areas of learning which should be included.

Degrees planned by students take account of their prior learning as well as future classroom and non-classroom learning. Faculty members review proposals and are responsible for approving the final plan covering both the specific vocational area and general arts program. For each area of prior learning, students document evidence and then are assessed by a faculty member in that area using one or two of written exam, oral interview, situational observation, product evaluation or simulation. This ensures that credit is awarded for sound, university level knowledge.

Methods of assessment to determine credit

There are a great variety of assessment techniques available to accredit learning from experience. One traditional method is giving the end of course examination on entry, but in most institutions where recognition of prior learning is practised, more innovative and personal methods are used. Assessment methods need to be appropriate, fit the type and amount of credit being sought, and match the objectives of the course. The time constraints of adults (work and family commitments) must also be considered when developing assessment tasks. It should be less time-consuming to be assessed for RPL than to do the course.

In theory, assessment methods include any way the applicant might choose to provide relevant evidence of learning. Students gather evidence of their achievements for presentation to the assessors or meet with them at their workplace. For example, a person who wishes to gain credit in a music course may provide a videotape or a performance or a set of manuscripts for evaluation. An inventor might provide documentation of the patent or a writer produce a published work and some newspaper articles. In practice, the most common method overseas appears to be the development of a portfolio but other methods may be combined with this. Equity between students taking different courses in the same institution and parity between subject requirements are other factors which are important.

Common assessment methods

- Portfolio
- Interview, structured or unstructured
- On-site evaluation to supplement an interview
- Performance testing
  - piloting a plane
  - playing a musical composition
  - using a computer
  - using technical equipment on site
  - giving a skills demonstration
- Documentation by self/others
  - letters of commendation
  - newspaper articles
- Brief essay, followed by conversation with assessor
- Lecture to novices explaining/demonstrating the key points of a topic
- Narrative writing private journal
- Product assessment
  - play
  - visual arts
  - computer program
  - book reviews
  - training manuals
- Academic writing professional journals
- Awards
  - prizes
  - certificates
  - licences
  - company training certificates
- Examinations
  - challenge
  - end of course
  - oral
  - standardised tests
- Completing a specific project
- Achievement in other accredited programs

Of these, only the portfolio will be considered in detail, as documentation on the other methods is readily accessible in the assessment literature.

Portfolio

While the principal purpose of providing documentation is to gain entry, credit or advanced standing in a course, the process of compiling a portfolio demonstrating personal and professional achievements, and gathering evidence about the learner has a significant impact on self-awareness of strengths and skills, and consequently heightens self-esteem. Gaps and weaknesses are also highlighted along the way, which enable applicants to be realistic in their credit claims. Preparing this profile may be the first review of a lifetime's activities and achievements, and this is in itself a validating and enriching experience.

Institutions have different requirements of what the portfolio should include, how it should be documented and the presentation style. For example, some accept narrative accounts, others prefer succinct lists of information. Many institutions suggest formats to assist students with structuring their information. An example of some headings comes from the Cabrini College *Student guide to portfolio development:*

Learning experience	Description of duties, tasks, and/or activities	Description of learning and skills demonstrated	Sources of documentation	Comparable course titles	Credit requested

With the introduction of RPL at the University of Technology, Sydney, indigenous adult students enrolled in the Associate Diploma in Adult Education (Aboriginal Education) with considerable community experience are taken through a series of steps to assist them recognise relevant learnings which might count towards credit. Activities include drawing a map of their life to highlight key events and significant people, thus setting the context for learning. They also complete a 'Journey through my own experience' in which a specific event they choose from their own experience is carefully 'unpacked' using a sequenced written reflection in order to identify the relevant influences, their development during this event, and the subsequent important learnings which may have been recognised at the time but often only with the benefit of hindsight (sometimes as a result of doing this exercise). Students are then better equipped to understand the difference between 'experience' and 'learning from experience', necessary concepts for them prior to completing their credit application. For disadvantaged groups such as Aboriginal students, where educational access has been limited and general courses often culturally inappropriate, the possibility of gaining RPL in these specialist qualifications provides an opportunity for self-validation, acknowledgement and more importantly, fast-tracking towards subsequent qualifications. The credit application process includes completing this form.

Description of experiences where competencies gained Write your story: Where or how I learned my skills?	Specify relevant knowledge, skills, attitudes What can I do and what do I know?	Evidence which is included or available How can I prove this?	Subject competencies Applicable (from subject outlines) Which competencies should I get credit for?

Empire State College, New York asks students to write an essay in an interest area to support their claim of college level learning. In many ways it is similar to the portfolio style. The suggested format expects students to be analytical and critical of their experience. It includes questions such as:

> *What aspects of your field have you not explored in depth?*
> *Did you learn more about your field by supervising or training others?*
> *Can you articulate the concepts learned through reading or in training sessions that were connected with your learning experiences?*

Thames Polytechnic uses a structured portfolio to assist students to identify their prior experiential learning heavily based on Kolb's learning cycle.

Students at the University of Technology, Sydney, in the Faculty of Education regularly use a portfolio/learning journal to reflect upon prior experiences and actively engage in their ongoing learning throughout the duration of their course. Portfolios are currently used in undergraduate and post-graduate courses for teachers in school and technical and further education, community educators, Aboriginal educators and community workers, and students enrolled in human resource development courses. The initial bibliographic components enable students to focus on their experiences, extract significant learning, and assess their learning. If they decide to apply for RPL, they may use the portfolio to document evidence to include in their application for RPL credit in selected subjects. Assessment procedures at UTS may include other methods in addition to the portfolio.

In a number of educational institutions credit towards a qualification is awarded on completion of a portfolio, whether or not this achieves additional credit for prior learning. This approach encourages students to enrol in a portfolio development course concurrently with other courses for which no credit will be sought. At the same time the course acts as an introduction to tertiary institutional practices. Enrolling in 'portfolio development' provides access to counsellors who deal specifically with applications for recognition of prior learning. This more gentle introduction to tertiary education for students who have been away from formal study for many years has proved successful in both the UK and the US. In some colleges, special attention is devoted during this time to development of writing and researching skills—important for applicants seeking entry with lots of experience but limited formal education. These programs thus serve as an orientation to institutional requirements.

It is quite rare for people to go through the assessment procedure for RPL in the US without anticipating a credit equivalent of at least 20% of the course (including a large proportion for the elective subjects). In most institutions, seeking credit requires considerable effort and time, and could not be justified for individual subjects in terms of the applicant's or the assessors' time.

Even if the portfolio is produced without attendance at a course, the process of documenting and collating evidence usually takes one to three months. For students who take a portfolio development course, the usual time frame is one semester and worth three or four credit points.

Sharing responsibility for the portfolio

This example (Cabrini College, Pennsylvania) illustrates how responsibility is shared when using the portfolio method for assessment. It is interesting to note the similarities between this and the Australian model suggested by Brown earlier.

Student responsibility

- *Identify*
- *Articulate*
- *Document*

These three areas are developed in the student's portfolio. The student states his/her personal and professional experiences, identifies the learning which resulted from these activities, explains how the learning relates to the degree's objectives and provides proof or evidence of these experiences and the related learning. Although this is the student's responsibility, faculty members or counsellors may assist by clarifying the appropriate level of learning and how it might best be presented.

Faculty responsibility

- *Measure*
- *Evaluate*

Faculty members determine the depth and extent of the student's learning experiences and use departmental and institutional standards coupled with their expert judgement in evaluating the experience and awarding credit. In preparation for this activity, the faculty member (or team) should:

- identify the standards in explicit and objective terms in order to judge the learning. All courses at this college have competency-based objectives and criteria.);
- select the procedure most appropriate for eliciting relevant responses: interview, product review, on-site observation, simulation or a combination;
- decide on the structure of the interview, whether it will be a structured (oral examination) or relatively unstructured discussion;
- select the most relevant information to demonstrate the student's competence;
- observe the student's behaviour;
- record reactions, feelings, responses in order to judge whether the evidence presented is relevant and of an appropriate standard.

Institutional responsibility

- *Record*

The administration records the credit awarded on the student's permanent record.

Managing the assessment process equitably

In addition to determining the methods of assessment, the organisation must develop the criteria which will be used to maintain credibility, validity and reliability.

Criteria for granting credit

In most institutions, the person in charge of the course for which credit is sought makes the final decision, but is likely to be informed by an RPL counsellor and/or a small committee. Key criteria to determine amount and level of credit awarded are:

Learning

The key goal of the assessment procedure is to award credit for how much is learned and not for the years of experience. Indeed, the number of years of experience may not be relevant if little additional learning is acquired after an initial period.

Assessors need to be assured of the authenticity of any material presented and that it is indeed written or produced by the applicant. (Authenticity checks also apply to licences, certificates, attendance documents.)

Standards

Checks must be implemented to ensure that standards determined by the course objectives are met and the documentation provided by the applicant is appropriate. This is critical if the institution is to retain its credibility.

Relevance and currency

The relevance and quality of the learning needs to be appropriate for the level and the area in which credit is sought. Skills and knowledge must be up-to-date.

Concepts and principles

Assessors should also draw out ideas, principles and concepts that underpin the competencies gained from the applicant's experiences. Assessors need to use language accessible to the applicant and applicants must be able to explain concepts in their own words, without using meaningless jargon which may hide gaps in their understanding.

Transferability

One feature of tertiary-level learning is that it provides the ability to apply information learnt in one context to another and to use theoretical knowledge for problem-solving. Assessors might ask what insights have been gained as a result of this experience or enquire about the application of these skills.

Sufficiency of the evidence

This is not just about amount but also the quality of evidence presented.

Common assessment problems

Educational units must develop a set of agreed principles prior to instituting RPL and need to publish written guidelines. Training for defining competencies, recognising effective learning and the continuing training of counsellors and assessors should be included as part of the normal staff development process. Teams of assessors are often used in order to avoid the following concerns.

Tendency to over-assess and under-credit prior learning

Many assessors have higher expectations of adult students and expect all students who seek credit to be equivalent to an 'A' student. It is quite sufficient for a student to produce evidence that would give a passing grade only—after all, those who reach that level in the formal course are given a pass.

Decisions about method of assessment and evidence of learning Students may wish to negotiate the method of assessment with the assessment team. The relative ease of assessing theoretical competence using written tests needs to be weighed against the perhaps greater validity of using more creative and effective ways to assess ability to apply knowledge.

Cultural and value differences Expectations and strongly-held beliefs about race, background, gender and age can predispose errors of judgement. Assessors need to consider how assessment will be managed for people from other cultures, given different languages, value systems and assessment expectations.

Constancy of assessment standards Reliability needs to be assured. If a number of students are assessed in a short period of time, the quality of the previous students can affect the objectivity of the assessment process.

Disagreements between assessors Strategies to deal with discrepancies between assessors need to be determined prior to the implementation of RPL. Preferences of the assessor and differences of opinion between assessors, such as favouring a particular approach, may affect judgement.

Appeal procedures Implementation of the RPL needs to include an appeal procedure. Many tertiary institutions already have appeal procedures in place to enable students to dispute examination marks, and a suitable mechanism for appealing RPL assessment might well be added to that policy. In industry, appeals may be directed to more senior supervisors or the professional body to ensure parity within the industry.

Conclusion

This chapter has focussed on recognising the importance of learning in the current industrial and educational context, regardless of how, where or why this learning was acquired. We have examined the application of RPL for assessing experience-based learning and its use as a strategy for personal and academic progression. Recent changes in legislation, industry and tertiary education and their impact have been important factors in underpinning the development of RPL in Australia. Examples from the US, UK and Australia indicate the current scope of RPL, while issues relating to the assessment process and some cautions to note have been indicated.

Recognition of prior learning is an important concept for a learning society. It demonstrates that education and training, whether delivered in an educational institution or in the workplace, is valued. RPL is already in operation in a limited form in many parts of Australia and developments this decade should broaden its application. An extension of the RPL process will lead to exciting and significant changes for individuals, organisations and the community resulting from increased accreditation and validation of the skills and knowledge of the adult population.

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Chapter 14

Self-evaluation

Bob Gowing and Shirley Saunders

As has been pointed out in the introduction to this book, the context within which vocational education and training is currently operating has changed considerably over recent times. The impact of these changes on assessment has been analysed in general terms in chapter 12. One specific outcome of these changes is the increased need for self-evaluation of teachers and trainers. As organisations become less hierarchical and the workforce less tightly supervised, individual trainers need to monitor their own effectiveness and to encourage their trainees to learn to do the same. The more general moves towards accountability in vocational education and training also increase the importance of self-evaluation. Rather than rely on a system of performance assessment which is inspectorial, the authors argue that a collaborative approach in which peers work together to evaluate themselves is preferable.

Gowing and Saunders go on to suggest that reflection on experience is the theoretical concept at the core of self-evaluation. On that point this chapter is on common ground with those on critical thinking [chapter 6] and self direction [chapter 5] which also argue for the importance of reflection.

The bulk of this chapter deals with ways of undertaking self and collaborative evaluation. The authors outline a number of models of supervision which can be adapted to self-evaluation and discuss the experiences of individuals who have used the methods. They conclude that although teachers who have used the model find it difficult at first, after some exposure they gain much from it. They include a number of checklists and evaluation guides which will be of practical use to teachers and trainers.

Why self-evaluation is important for teachers and trainers

> *'I have never heard anyone whom I considered to be a good teacher claim that he or she is a good teacher—in the way that one might claim to be a good writer or surgeon or athlete. Self-doubt seems to be very much a part of the job of teaching: one can never be sure how well it is going.' Joseph Epstein (1985)*

Do you teach well? Are you an effective trainer? What do your students/learners think about teaching? What do you think about your teaching or training activities?

Evaluation of professional practice is an important concept in the development of all vocational educators. There are many types and forms of evaluations of teaching/training performance and most trained educators are familiar with the traditional inspectorial method of observation of practice at the beginning of their careers. Later, when applying for promotion, vocational educators may again face the presence of an evaluating observer even if the job they are seeking is primarily in administration or management. Trainers usually collect evaluative comments from participants especially at the end of a program but often these evaluations are constructed to provide more information on the relevance of the objectives and methods of the program than on the effectiveness of the professional practice of the training personnel.

In reality the traditional form of evaluative observation of a vocational educator's performance is a very stressful experience for a large number of people. Most of those observed show severe to mild concern and only a few display calmness and confidence. The over-riding factor of this type of evaluation is that the assessments and observations are always 'done to' the learner. The evaluation is not usually sought or requested by the individual educator. However, trainers these days may find themselves under strong pressure to evaluate their performance and the course structure in order to report to the organisation who provides the funding for the training program. The obligation on many Australian employers to spend a minimum amount on training under the Training Guarantee Act (1990) has focussed organisational concern on the criteria of eligible training and inevitably on the performance of the trainer/consultant who delivers the training. Other recent developments in Industrial Award Restructuring where performance indicators are being specified indicate that staff appraisal will become more standardised and frequent. We are all becoming more accountable for our productivity and performance. Teachers and trainers will be no exception.

In view of this increasing emphasis on performance assessment throughout the modern workplace, how can teachers/trainers evaluate their performance effectively? Systems of formal supervision of beginning teachers and trainers are most likely to continue along old inspectorial lines. Given this, we would like to discuss other means of assisting vocational educators either to collaborate to evaluate each other's performance or to work alone—in other words, to carry out self-evaluation of their own practice. After all it is the duty of the vocational teacher and trainer to help others to learn. If teachers and trainers can gain insight on their skills as educators, determined by ongoing self-evaluation, then the products of everyone's energies will be greater. Both the educator and learner will benefit and the 'isolation' of the educator as a practising professional will be counteracted.

The fact that teachers and trainers are rarely observed by fellow practitioners in the normal course of their teaching has been recently emphasised by Kilbourn (1988, p. 95):

> *It is not uncommon that a teacher might go through an entire career having made only a handful of observational sojourns into a colleague's classroom.*

Vocational educators are, in practice, customarily removed from feedback from other practitioners which might expand their analytical concepts or frameworks of reflection on their classroom experience. It could therefore be argued that educators are likely to continue to use habitual responses in the classroom rather than to develop new ways of adjusting, changing and extending their strategies of practice. Team teaching, for example, tends to break down this intrinsic difficulty of generating new ways of looking at an educator's own practice. In this chapter we would like to discuss effective ways of working collaboratively with peers or supervisors to evaluate practice and, in spite of the difficulties just referred to, we would like to provide some key guidelines for using self-evaluation on practice so that professional development can occur.

Thus the main purpose of this chapter is to provide vocational educators with models which will assist the development and enhancement of the necessary skills required in the delivery of educational/training programs. It is argued that self-evaluation encourages and empowers those who deliver educational/ training programs to take control of the evaluation of their own performance. It is a model where there is no dependency upon others to tell educators what they have to do. The onus for improvements in teaching performance rests with individual vocational teachers or industry trainers. Let us now look briefly at some of the key theoretical concepts that underlie the self-evaluation model.

Theoretical perspectives: understanding the underlying philosophy of self-evaluation

The model of self-evaluation which will be explained rests upon the teacher/trainer adopting a reflective attitude to practice. Reflective methods of turning experience into learning (Boud, Keogh and Walker 1985) have been explored and explained recently by, notably, Schon (1983, 1987), Carr and Kemmis (1983), Russell (1984), Zeichner (1986, 1989), MacKinnon (1987) and Grimmett and Erickson (1988). These authors have discussed the epistemological bases of reflection on experience highlighting a constructivist perspective. In this view, the classroom experience of each teacher/trainer and learner is 'constructed' according to each person's individual frames of reference which are influenced by, for example, past experience, prior learning, preconceived ideas, feelings, attitudes, values, interpersonal theory and skills and the institutional constraints on the learning environment.

We can reflect on our experience during and/or after the event. Schön has referred to both reflection-in-action which may be carried out during the teaching/training event (Schön, 1983) and reflection-on-action, where the reflection takes place some time after the event. A great deal of analysis has been focused on Schön's concept of reflection-on-action. Schön recommends that educators pay attention to things that puzzle or confuse them during a teaching/training session. He suggests that at a later time educators should try to recall these puzzles for reflection-on-action. By returning to their reconstructed experience of these puzzles, it is argued that educators can attend to previously unnoticed details and feelings. Through this retrospective process of reflection a re-evaluation of experience may take place enabling educators to form new associations between existing cognitive structures and aspects of the experience they wish to focus on. Further processing may integrate the insights into a new pattern of ideas and attitudes (Boud, Keogh and Walker, 1985, p.32). These outcomes prepare the educator to apply the new learnings appropriately in a future teaching/training session.

This commendable process of reflection-on-action relies on the ability of the educator to recall the constructs of past experience with as much richness of detail and feeling as possible. The more information the reflective practitioner has available, the more likely it will be that the reflective process will generate alternative explanations for development of future practice. Apart from the acknowledged difficulty of recall, educators are part of a complex learning environment with multiple interactions occurring simultaneously, verbally and nonverbally, among many participants. This complexity requires educators to attend selectively to particular aspects which are occurring. This filtered view of what took place then becomes the potential information for later recall and reflection on practice. While all life experience is subject to selective perception, the practising educator is particularly likely to miss communicative signals from learners outside his or her field of attention. In other words, the reflective process of the educator can be blinkered by at least two forms of selection: first by the intrinsic selection operating on all human perception; and secondly by the extrinsic overwhelming activity of the classroom. We would like to suggest that educators using the reflective techniques of self-evaluation of practice increase their access to the data of the wider classroom experience by recording the event on videotape. We shall offer some guidelines on this later in this chapter.

Meanwhile in recent years there have been a number of innovations in the design of the practicum for beginning teachers/trainers. These changes have the potential to encourage educators to adopt a more reflective, and self–evaluative, approach to their professional practice. Some of the innovations in the practicum include:

- thematic teacher education practicums built around coherent statements of the role of the teacher;
- explicit practicum curricula with a closer coupling of the practicum to specific award courses;
- types of research-based practicums, including the reflective practicum;
- efforts to improve the quality of practicum supervision, including peer supervision;
- redefinitions of the practicum as a 'cognitive apprenticeship' (Zeichner, 1989).

Allied to Schön's coaching models (Schön 1987), others in the field of teacher supervision have suggested methods of supporting reflection on practice. For example, influential work has been done by Goldhammer, Cogan and others (clinical supervision), Glatthorn (differentiated supervision), Glickman (knowledge and certainty in the supervision of instruction), Smyth and Kemmis (action research methods).

In particular, the process of clinical supervision forms the basis for the model of self-evaluation discussed in this chapter. Inherent in our model of self- evaluation is the need for critical reflection following action, consequently evidence of the value of reflective thinking will also be considered. The method of clinical supervision is intended to develop the practitioner's skills of self-analysis, receptivity to advice and ability to be self-directing in setting and solving problems throughout their careers (Cogan 1973 and Goldhammer 1969 cited in Goodfellow 1989). It has also been described as a process in which colleagues work supportively with each other in dialoguing, proposing hypotheses, and analysing each other's teaching (Smyth 1985). The model consists of a cycle of interaction › observation › analysis › further interaction. Teachers/trainers may interact with supervisors, colleagues or even themselves.

Clinical supervision enables educators to accept professional responsibility and to become committed to the enhancement of their own teaching through reflection, with the support and help of colleagues. The central feature of the clinical supervision process is the sharing of critical and supportive feedback based on *recorded* observations which are open to mutual examination (Smyth 1985). The model can be represented by the following diagram (figure 1).

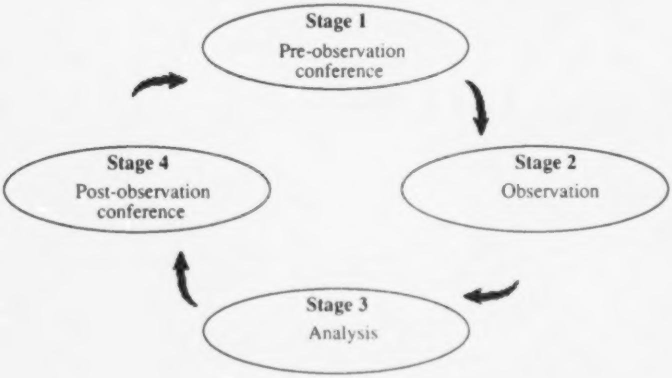

Figure 1

Stage 1: Pre-observation conference	At this initial stage the teacher/trainer works with a supervisor/colleague/mentor to identify issues relating to teaching/training practice and the learning group.
Stage 2: Observation	Here a record is made of teaching/training practice using predetermined methods (videotape, checklists). Notes may also be made on the observation by the supervisor/colleague/mentor.
Stage 3: Analysis	The teacher/trainer examines the records of the teaching/training session. Supervisor/colleague/mentor may also examine the evidence. All stakeholders critically reflect on the session and engage in focused analysis of practice.
Stage 4: Post-observation conference	At this stage there is a discussion of the issues raised in the pre-observation conference and other relevant issues arising from the recorded observation and the analysis (stage 3). Outcomes of critical reflection are shared between the teacher/trainer and the supervisor/colleague/mentor.

The conferencing described in stages 1 and 4 is the cornerstone of clinical supervision. At these conferences teachers/trainers work closely together with their supervisors or fellow teachers as colleagues who aim to co-operate and share their knowledge of teaching. In this model, supervision is seen as a sharing process to encourage the development of the teaching professional. All participants share their philosophies on teaching, their views of the learning process and their beliefs on the ethical and moral dimensions of their work. The four stages of clinical supervision combine to empower the educator by acknowledging the importance of all roles in the supervision process (Smyth 1986). The mutual respect which is generated by the model replaces the usual fears and resentments that plague current inspectorial practices. Instead, all who participate share a conscious desire to strive to enhance the quality of instruction.

Glatthorn (1984) suggests another supervision model for educators who wish to implement a self-evaluative approach to reflect on their practice. Known as 'differentiated supervision' or 'developmental supervision', the model incorporates alternative options to assist teachers/trainers to use a wide variety of methods to evaluate their teaching. Indeed a combination of the previously described process of clinical supervision and key elements of Glatthorn's differentiated supervision makes a powerful method for evaluating practice.

A useful connection can also be made between these models and the concept of mentoring as described elsewhere in this book. Also there are close links to coaching as coaches perform similar functions to those of a collaborating supervisor. Coaches and collaborating supervisors.

- discuss strategies and procedures with other practitioners which allow the sharing of experiences and perspectives related to significant aspects of the job;
- observe other members of the team at work;
- participate in feedback sessions where both evaluative and non-evaluative feedback is given;
- conduct meetings at which past experiences are analysed and coming activities are discussed.

There is much to gain from collaborating with peers to enhance the development of teaching/training skills. Let us now consider the process of *clinical supervision* in more detail.

The process of clinical supervision

Stage 1: The pre-observation conference

At this stage the teacher/trainer and collaborative colleague meet prior to the teaching/training event to discuss what is likely to occur. In a spirit of willingness to learn more about educational practice, they will discuss such things as the nature of learners, the content of the session, educational goals and objectives, the focus for later analysis of practice, particular teaching strategies, alternative methods of recording the teaching experience and the prospect of videotaping the session. Working collaboratively through an agreed agenda, the teacher/trainer who is to be observed gains a sense of control about the direction of his or her professional development.

The following set of questions is an example of a pre-observation conference agenda which could either be discussed in conference or issued as a questionnaire to be completed by the teacher/trainer alone prior to the observation (Glatthorn 1984).

- What are the general characteristics of the learners? What should an observer know about them as a group?
- Are there any individual learners experiencing learning or behaviour difficulties?
- What general academic progress have the learners made? Where are they in relation to the goals for the year?
- What are the specific objectives for the session?
- What is the general pacing strategy? About how much time do you plan to devote to each major objective?
- What teaching methods and learning activities do you plan to use in order to accomplish these objectives?
- How do you plan to assess learning and give feedback to the learners?
- What alternative scenarios have you prepared in case one of the planned activities does not work out?
- Is the observation to be focussed or unfocussed? If focussed, what will be the focus of the observation?

Stage 2: The observation

The teaching/training session is conducted as discussed in the pre-observation conference. The purpose of observing the teacher/trainer is to bring another pair of eyes, another perspective to the teaching encounter. It is important here that the observer records what he or she notices about the experience. As this will inevitably be selective, the use of videotape as a method of recording the experience is highly recommended.

The focus of the observation might be on any of the following areas, although this is not a definitive list:

- time for learners to complete tasks;
- teacher/trainer position, that is where the teacher/trainer sits or stands in the room;
- interaction patterns of oral communication;

- responses to inattentive learners;
- responses to unexpected answers from learners;
- learner involvement;
- variety of teaching/training techniques;
- use of time by the teacher/trainer;
- use of criticism and praise;
- organisation of resources by the teacher/trainer;
- explanation of concepts by the teacher/trainer.

In the pre-observation conference, the teacher/trainer has already identified certain aspects of practice to focus on and improve during the recorded teaching/training event. Written feedback on these specific issues from a supportive observer is always valuable. However, the impact of a videotaped record can be even more useful for a practitioner engaged in self–reflection on practice (Gowing, 1989). We suggest that if videotape is to be used it is most effective if the teacher/trainer owns the tape. This allows the teacher/trainer to control who sees the tape. Videotape is intrusive... at first! So is an observer. Nevertheless, after a period of time, practitioners accept the intrusion as part of their normal practice. Experience has shown that most teachers/trainers soon forget that the video is there. The chief advantage of using videotape to record the experience for feedback is representational accuracy. Video provides a believable record of actual practice. During playback, a richer array of the details of practice is presented for reflective analysis. Consider the following quotations which show that, while at first threatening, the acceptance of video feedback has been wholehearted.

> "As I have previously told Bob the video was probably the most valuable feedback that I had received in my teaching career."
>
> "I will never say I enjoyed it but I can see the advantages of having had a video taken of my teaching."

Stage 3: Analysis

This is a time for reflection for both the teacher/trainer and the observer. The teacher/trainer reads the written comments given to him or her immediately following the observation and views the video. The teacher/trainer may choose to allow the videotape to be seen by the observer, who would then view the tape alone. The role of the colleague-observer is to give the teacher/trainer an appreciation of the situation from another viewpoint (Smyth, 1985).

If the teachers/trainers are self-evaluating their practice, they can use the questions and guidelines listed below as a framework for reflection.

To assist the reflective process in the analysis stage, the teacher/trainer is asked to consider three questions:

- How do you feel about what you have just seen?
- What were the pluses?
- If you were to present this session again, what would you do differently?

In Joy Goodfellow's 'reflective-analysis' model (1989), this stage of analytical reflection is assisted by the following guidelines:

Describe	Teacher/trainer states what happened. ("What I did and how I did it.")
Inform	Teacher/trainer considers why things happened as they did. ("These are some of the factors which influenced what happened.")
Challenge	Teacher/trainer is encouraged to analyse and explain the underlying assumptions using theoretical knowledge and its application. ("From theory about.... I have developed the understanding that... I therefore believe that ...")
Reconstruct	Teacher/trainer considers alternative solutions to problems. Tests of new hypotheses are proposed to match knowledge with practice and place the whole in context. ("Considering what I now know, if I approach it this way, the result might be...")
Evaluation and synthesis	A basis has now been achieved to assist further inquiry, analysis, synthesis, experimentation and re-evaluation.

Goodfellow makes the point that at this stage a supervisor would normally make a summative evaluation for assessment purposes. In a self-assessment mode this type of evaluation could be done by the teachers/trainers themselves to arrive at a summary of personal strengths and to identify areas for further development.

Stage 4: Post-observation conference

This gives the teacher/trainer the opportunity to discuss the teaching/training event in terms of any perceived problems and to ask questions. The observer may wish to add to or change specific feedback based on the reflective processes used during the analysis stage. This conference should be conducted fairly soon after the observation, ideally within one week. During the conference, the teacher/trainer should be encouraged to set new goals and formulate an 'action plan' for further development of skills.

Using the clinical supervision method for self and collaborative evaluation

The clinical supervision method presented above can be used collaboratively with a colleague or mentor who has agreed to co-operate with you to enhance both teaching/training practice. Alternatively, you can use the model as a structured way of assisting self-evaluation of practice.

Co-operative self-development

We all construct our practice from a personal and private viewpoint based on an ideal self. So what you construct may not even approximate the constructions of others. If you can find a trusted colleague who can share some of your teaching experiences and hold an ethical and professional approach, then it is believed that you will gain greatly from reflecting on the feedback he or she can offer.

Some suggestions:

Explore your own and your colleagues' views about:

- the nature of the learners
- the purposes of education and training
- the curriculum/subject
- approaches and styles of teaching/training
- preferences about planning teaching/training sessions
- views on the learning environment and classroom management
- your relationship as colleagues: attitudes to observation as mutual learning

If you feel you can trust the other person and would like to work with him or her you have a good basis to start. Suggestions for making observations of practice are given below.

Suggestions for making observations on your practice

Q *How long should I observe?*

A Stay for at least a half an hour. Try to see a complete learning episode, from beginning to end (Glatthorn, 1984).

Q *Where do I sit?*

A The best place is a spot where you can see both the teacher/trainer and the learners' faces. Try to make yourself as unobtrusive as possible (Glatthorn 1984).

Many observers sit at the back of the room and thus miss the opportunity to see the learners' reactions. It is useful to place the camera on a tripod about half-way back. The camera can then be panned around the classroom while the teacher/trainer talks.

When playing back, the teacher/trainer can then hear his or her own voice as well as see a number of learners' faces. The camera may also be carried on the shoulder during the lesson and the learners may be videoed close-up. This can provide valuable extrinsic feedback to the teacher/ trainer about the skills development of the learners.

Q *Should I take notes?*

A Yes, they will help you in writing your report.

Q *What notes do I take for an unfocussed observation or an overview of the general performance of the teacher/trainer?*

A Make you your own form. Keep a running record of what happens making notes in increments of three to five minutes. Draw up five columns: time/ teacher objectives / teacher activities / learner responses / learner activities (Glatthorn 1984).

Q *What notes do I take for a focussed observation?*

A Devise your own form. Think about what the teacher/ trainer has asked you to observe and rough out a form that will help you gather the data you need. 'Use your own easy to remember code' (Glatthorn, 1984).

Individual self-development

'To thine own self be true' This is an opportunity for you do an honest evaluation of your own practice. Self-evaluation may be less confronting than working with another person and it may suit you to work on your own. Use the questions posed in Glatthorn's *pre–observation conference agenda,* make use of videotape to record your session and adapt questionnaires (see examples below) to assist you to comment on specific aspects of your teaching. Then follow the model as described in figure 1.

Examples of self-evaluation formats

Self–evaluation checklist

How well did I...?

		Very Well	Satisfactory	Not Well	Poor
1	Link this session to other sessions				
2	Introduce this session				
3	Make the aims clear to the learners				
4	Move clearly from stage to stage				
5	Emphasise key points				
6	Summarise the session				
7	Maintain an appropriate pace				
8	Capture learner's interest				
9	Maintain learner's interest				
10	Handle problems of inattention				
11.	Ask questions				
12.	Handle learner's questions and responses				
13.	Direct learner tasks				
14.	Cope with a range of ability				
15.	Monitor learner activity				
16.	Use aids as illustrations				
17.	Make contact with all learners				
18.	Cope with individual differences				
19.	Keep the material relevant				
20.	Use my voice and body movements				
21.	Check on participant's learning				
22.	Build up learner's confidence				
23.	Convey my enthusiasm				
24.	Provide a good model of practice				

Source: Gibbs, G. and Habeshaw, T. (1989). Preparing to teach. Bristol: Technical and Educational Services.

Planning and management

Preparation and planning	Comment here on the objectives, selection of content and choice of learning activities in relation to: the nature of the subject matter; learner's interests; abilities and stage of development; individual and group needs.
Class management	Comment here on the teaching and communication techniques: ability to establish teacher/learner relationships conducive to learning; organisation of large and small group techniques; use of voice and gesture.
Use of resources	Comment here on the knowledge, use and management of reference materials, handouts and resources and on guidance to students about the use of learning resources outside class.

Monitoring effectiveness	Comment here on the way the effectiveness of teaching methods and learner's progress and understanding was monitored during the session and on the way responsive action was taken.
General appraisal	Summarise overall strengths and weaknesses and the identification of areas and issues for further development.
Source	Gibbs, G. and Habeshaw, T. (1989). Preparing to teach. Bristol: Technical and Educational Services.

Teaching and learning processes checklist

Responsibility	Who took charge? Who did all the talking? Who took responsibility for the learning? Did this change as time went on? Who determined the pace?
Teaching strategy	Did the teacher/trainer adopt any particular teaching strategy (such as demonstrations, lectures, testing, summaries, revision, diagrams, using paper and pencil)? Was the teacher/trainer flexible about his or her strategy in the light of how well it was working, or did the teacher/trainer plough on regardless?
Sensitivity	Did the teacher/trainer appear to be aware of, and responsive to, learner's needs? Give examples.
Emotions	What emotions were expressed (e.g. anxiety, excitement, boredom, annoyance)? Did the expression of these feelings have any effect on the efficiency of the teaching?
Learning strategies	Did the learners show any particular strategies in going about learning (e.g. passively, methodically, wanting information, demanding examples, taking charge)?
Source	Gibbs, G and Habeshaw, T 1989, *Preparing to teach*, Technical and Educational Services, Bristol.

Working towards improved teaching and training 'in the real world'

If you are going to collaborate with others when you evaluate your practice it is essential to find a colleague whom you can work with and who will treat the process in a fair and confidential manner. Any criticism is a blow to the ego, so it is imperative that your partner in the evaluation process brings the appropriate level of empathy when he or she co-operates with you. Mutual trust and respect are required for collaborative evaluation to work.

There are a great many teachers and trainers who seriously attempt to enhance the quality of their practice using self-evaluation. Gibbs and Habeshaw (1989) present informative and convenient suggestions on self-evaluation. They provide many useful guidelines on how to take effective responsibility for your own reflection on practice (see examples above).

Statements from teachers and trainers demonstrate clearly that there is real commitment to appraisal and evaluation of practice. For example:

> *"I think learners have a right to expect us to evaluate what we do and make serious attempts to improve things. They are our customers and we are providing a service. I intend to use a questionnaire this term if I can find the time to devise one."*
>
> *"I wouldn't mind a friend coming to see me teach, as long as he didn't try and join in or anything, but I'd want him to be gentle. I'm not sure I could cope with too much criticism."*
>
> *"I've been told that you can learn a lot from seeing a video of yourself. I'm sure that's right but the idea scares the hell out of me."*

Vocational educators' reactions to the clinical supervision method

Open-minded self-evaluation

During a recent observation one of the authors videotaped a teacher who genuinely wished to improve his teaching. The teacher retained the videotape and was encouraged to reflect on three questions:

- How do I feel about what I have just seen?
- What are the pluses?
- If I were to do this again, what would I do differently?

He looked at the videotape overnight and did a self-critique of his teaching. As a result he produced one and a half pages of points he wished to talk about. Add to this the author's observations and we had quite a lot to reflect on. We consider this to be true learning, true self-evaluation.

Two other teachers perceived video feedback differently.

Risk-taking self-evaluation

"Always curious about how I looked and how I came across to my students, I thought it would be an excellent opportunity to see myself warts and all.

Bob and I watched parts of the video together after my class. It was a revelation—I vowed to go on a diet, have a nose-job and have elocution lessons. Bob was very supportive and offered constructive comments. Without his comments, it would have been a very negative experience because I focussed on my faults, while Bob focussed on my strengths.

Bob has observed and videoed my teaching since the first time. By then, I had been teaching and attending teacher training for twelve months and so had improved a great deal. The second video gave me some very positive feedback that my hard work was paying off. There were still some faults but not as many as previously.

As I have previously told Bob the video was probably the most valuable feedback that I had received in my teaching career.

The thought of an observation was to me extremely traumatic. The thought of compounding this with a video camera charging around the room was even more horrific.

After the class was finished Bob handed me the tape and for a short moment I felt a sigh of relief. I had the only copy and no one need see it at all.

Trouble started when I plucked up the courage to view it in my own home while everyone was out (or so I thought). I was horrified to find my daughter had been watching around the corner. This was strengthened when at the dinner table the whole family was told how Mum teaches.

Although I thought I had hidden the videotape safely away it was produced by my daughter for the whole family to watch.

I felt terrible. Then interested questions emerged and the family topped off the viewing by saying things like:

'I didn't realise you taught like that.'

'Hey Mum, that was great.'

I will never say I enjoyed it but I can see the advantages of having had a video taken of my teaching."

Benefits and pay-offs of self-evaluation

So what are the benefits for the teacher/trainer, observer and learners?

- Perhaps the most important benefit is that the method offers teachers/trainers an extended and wider perspective on their practice.
- In terms of hard data, a videotape provides more detailed, specific evidence of experience.
- The methodology is collaborative and the teacher/trainer takes responsibility for his or her own professional development of practice.

- This approach allows for greater feedback through the availability of videotape evidence and written comment from observers.
- Both the teacher/trainer and observer learn from the observation and feedback.
- The feeling of alienation of 'them and us' tends to dissipate. The teacher/trainer no longer fears the person coming to the learning group. Thus the teacher/trainer has input and control which were not possible under the traditional inspectorial style of supervision.
- Teachers/trainers are encouraged to develop the skills of reflection. Skills they can use all their lives.
- The needs of the learners are an integral focus of these methods of self and collaborative evaluation.

A final word

The method of self-evaluation described here is based on a well researched model of teacher supervision. Clinical supervision provides a valuable and dynamic structure for practitioners to enhance the quality of their teaching/training.

We have focussed on reflective self-evaluation of practice in the belief that teachers/trainers do not need to rely on others to tell them how effective they may or may not be in the classroom. Teachers/trainers can and ought to try to work for improvement of their teaching practice because of personal commitment to quality learning. The methods described here will facilitate this improvement.

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The contributors

Ruth Cohen	is a lecturer in the School of Adult Vocational Education at UTS. She is currently engaged in implementing ways of recognising prior learning for adult students and industry trainers. She has been a consultant on assessing prior learning and on using experiential learning in training. She is the chairperson of the Australian Consortium on Experiential Education
Lann Dawes	is a lecturer in the School of Adult Vocational Education at UTS. He has been involved in the development of self-paced learning in institutional and workplace settings. His research interests are in the area of emotion and adult learning.
Griff Foley	is a senior lecturer in the School of Adult and Language Education at UTS. He has wide ranging expertise in adult education including interests in policy studies and in adult learning theory. He is particularly interested in the development of self–directed learning in a variety of settings.
Andrew Gonczi	is the head of the Department of Human Resource Development in the Faculty of Education at the University of Technology Sydney (UTS). His main interests are in the area of occupational competence and in policy studies in vocational education and training. He has recently been a consultant to professions and government in the developing of competency standards and is currently engaged in a project developing a national research and development strategy for vocational education and training
Bob Gowing	is a lecturer in the School of Adult Vocational Education at UTS. He has for many years been involved with the teacher education of TAFE teachers and he is particularly interested in the question of field supervision. He has considerable experience of working with trainers in industry.
Paul Hager	is deputy head of the School of Adult Vocational Education at UTS. He has research interests in occupational competence and in particular the development of critical thinking as a part of that competence. He has been involved in developing competency standards and has recently been engaged by various organisations to develop ways of developing critical thinking capacities in their workforce.

Geof Hawke	is now with the National Community Services and Health Division of the Industry Training Advisory Board, Sydney. He was previously head of the NSW TAFE task force investigating the implications for TAFE of award restructuring and head of the TAFE assessment unit.
Geoff Hayton	is a senior lecturer in the School of Adult and Language Education. He was until recently the manager of Core Grant Research at the TAFE National Centre for Research and Development (now the National Centre for Vocational Education Research Ltd). His current research and teaching is in the area of workplace reform skills analysis and training.
Michael Kaye	is the head of the School of Adult Vocational Education at UTS. His field is organisational communication. He also has an interest in critical thinking and how it can be developed in vocational settings. He has extensive consulting experience in industry in developing communication competencies.
Elizabeth Leigh	is a lecturer in the Department of Human Resource Development at UTS. She has been involved with the training and development of trainers in commerce government and industry for many years as a training manager, consultant and now at UTS. Her particular interest is in experiential education, especially games and simulations.
Doug McCurry	is a research fellow in the measurement division of ACER. He has worked in test construction and assessment and his research is in writing-based assessment. He has worked for NOOSR in designing tests for its professional panels.
Liz Oliver	is an education officer with the TAFE assessment unit. She has been involved with a wide range of assessment issues within TAFE and has been involved as a consultant in assessment issues relating to the competencies of overseas professionals.
Peter Russell	is a lecturer in the School of Adult Vocational Education at UTS. He has been widely involved in recent years in the training of trainers both in industry and, in particular, in the Armed Services. His academic interests are in the area of cognitive psychology.
Shirley Saunders	is a lecturer in the School of Adult Vocational Education at UTS. She has wide interests in adult education, particularly in the area of communication and has for many years been involved in the training of TAFE teachers in this area. Her recent work has involved her in the development of training workshops for industry and government. She has also been active in the design of communication modules to be used in industry.

Hank Schaafsma	is a senior lecturer in the Department of Human Resource Development at UTS. He has wide ranging interests in this field but his particular interest is in managing organisational change. He has been a consultant to various organisations in this area.
Geoff Scott	is deputy head of the School of Adult Vocational Education at UTS. His main interests are in managing educational change and in the implementation of research in vocational education. He also has an interest in vocational teacher competence. He has been a consultant to various organisations, helping them manage organisational change.
Laraine Spindler	is a lecturer in the School of Adult Vocational Education at UTS. She has been involved with the training of both vocational teachers and industry trainers for many years. Her main interests are the area of individualised instruction and in designing intensive learning experiences through workshops.